REVIEWS! CanDo 2.5, MovieMaker, DeluxeMusic 2.0 . . . More!

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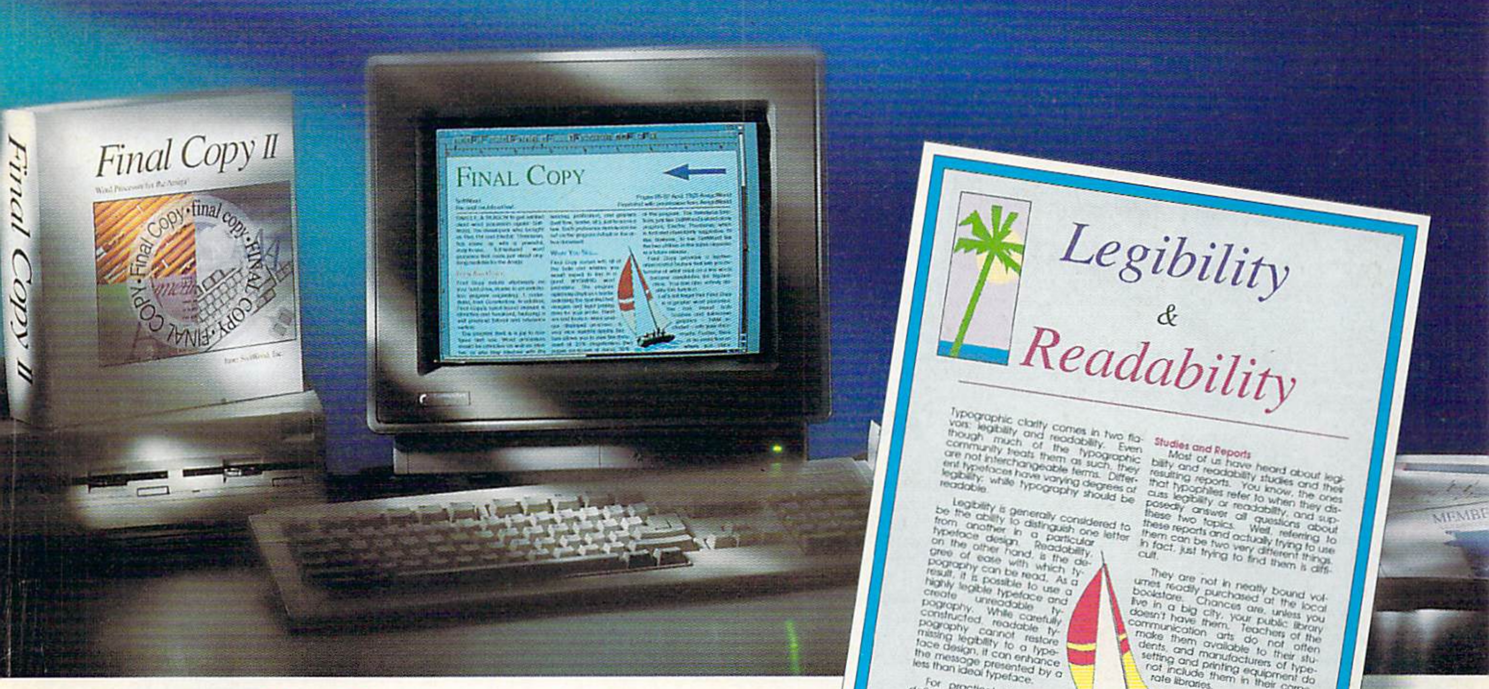
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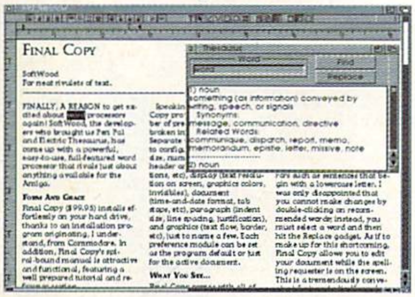
Final Copy II produces high quality, professional looking documents. It combines advanced word processing features, easy-to-use page layout capabilities, and state-of-the-art printing technology into one convenient program.

While other programs claim to have quality printing, Final Copy II is the only word processor on the Amiga that will produce excellent quality printouts on any Workbench (1.3, 2.0 or higher) supported graphic printer. If you have a PostScript printer, Final Copy II is the only word processor on the Amiga that has true WYSIWYG PostScript print capabilities - other programs limit you to a few fonts and a limited number of sizes. Final Copy II supports NimbusQ, Compugraphic, and Type-1 outline font formats giving you access to thousands of commercial and public-domain fonts.

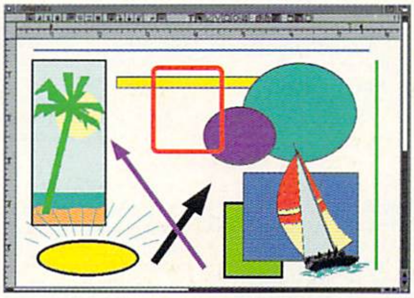
Final Copy II's word processing features include: 144,000 word speller; 1.4 million response thesaurus; automatic hyphenation; named paragraph style sheets; master pages; mail-merge; multiple newspaper style columns; search and replace; header and footer support; left, right, center and decimal tabs; paragraph justification; and automatic date, time, and page number insertion.

Final Copy II's graphic features include: object-oriented, structured tools for drawing boxes, ovals, lines, arrow-tipped lines, and rounded cornered boxes; cropping; graphic sizing; object locking; and graphic depth arranging. Full AGA support lets you work in screens having up to 256 colors.

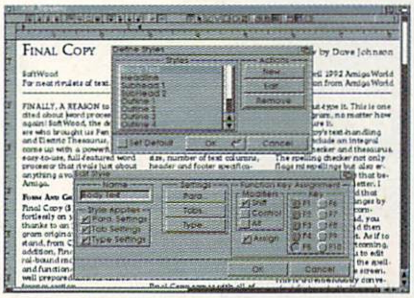
Final Copy II now available in American English, British English, German, French, and French-Canadian versions is the best selling word processor for the Amiga in the world. As stated in a recent AmigaWorld review, "FinalCopy II pulls into the lead of the Amiga word-processing pack."



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To use Compugraphic fonts you must have a hard drive and WB 2.1 or greater.
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Circle 87 on Reader Service card.

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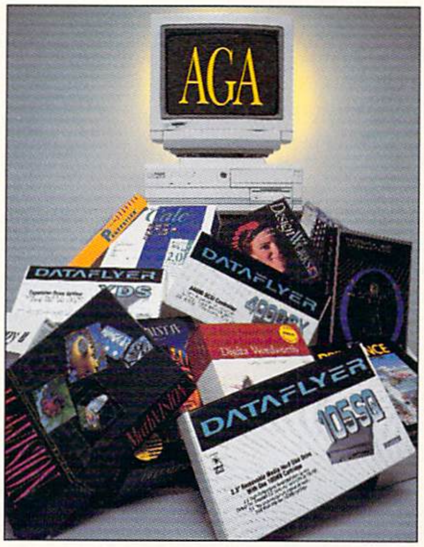
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Owners of AGA systems—and others who've been thinking about upgrading—have been asking us one very significant question lately: Is there enough Amiga software and hardware out there that really takes advantage of special AGA features to make having such a machine worthwhile? A good deal of research went into our answer—and you'll find the results in the special guide beginning on p. 24.

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COVER PHOTOGRAPH BY EDWARD JUDICE

EDITOR'S DRAWER

Reader surveys provide information that can make even the most prophetically challenged editor appear downright insightful.

WHO READS *AMIGAWORLD?*

Sometimes publishing a magazine requires the prognostication prowess of a soothsayer to keep up with the latest trends and applications. The trick is to anticipate and predict changes in the market with a fair degree of accuracy. *AmigaWorld* relies on time-tested, conventional methods, and that's where you, the reader, come in.

We don't need an oracle to tell us that the best source of ideas and impressions about the Amiga market is our readership. Keeping an open ear to what you are saying, how you react to new announcements, what you are buying, and how you're using your systems is critical in understanding and serving the market.

Since meeting the needs of our readers is *AmigaWorld's raison d'être*, it makes sense to monitor your opinions and comments. *AW* keeps in touch by attending computer shows, and through correspondence and phone calls.

But perhaps the most revealing means of communication with our readers is through our annual subscriber survey, which solicits feedback regarding computer use, buying intentions, application preferences, and the magazine. While the most recent survey confirmed many of our assumptions, it also gave us new insights:

—Amiga 2000 and 500 users currently constitute the majority of *AW* readers. Commodore's AGA machines, have a ways to go before they surpass this installed base.

—More than 45% of those surveyed plan to buy a computer in the next year; the A4000 is the system of choice.

—One of the attractions of the Amiga has always been its expansion possibilities, and this is a top priority among readers. RAM, hard drives, and, eventually, CD-ROM drives are the most popular Amiga add-ons.

—Gaming and entertainment ranks as the top personal application among *AW* readers. And while the Amiga has led the way in videographics, its power is also suited for such high-interest applications as word processing, animation/graphics, desktop publishing, and music/sound.

—*AmigaWorld* readers expressed much interest in learning more about programming, specifically ARexx and C.

—Telecommunications is another topic of interest, with about 80% of the readership involved in on-line activities.

—*AW* readers are experienced users with broad-based personal computing interests, and have invested much time and money in their systems. They cite the Amiga's multitasking, high-quality graphics, and sound capability —all for a reasonable price—as the main reason for their steadfast commitment to the market.

If there are areas you are particularly interested in, drop us a line. With continued reader assistance, *AmigaWorld* will publish the material you need.

Dennis Brisson
Editor-in-Chief

AmigaWorld

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OVERSCAN

News, New Products and Networks

Getting Better All the Time

One look at this month's updated software and hardware is proof of Darwin's theory of evolution. The latest breed of updates offer welcome additions to the old stock.

Quarterback 6.0 ($99.95, ***Central Coast Software/New Horizons***), the hard-disk back-up utility, claims faster software-based compression. New to the software is Schedule Pro, a program that allows you to schedule and automatically execute a Quarterback backup or any AmigaDOS or ARexx script. Quarterback 6.0 can back up a large hard disk across multiple tapes; it supports hardware-based DDS compression, fast searching, and quick erasing of tapes. The update costs $30 for owners of version 5.0 and $40 for earlier versions. (RS# 131.)

Invoice It! 1.1, the invoicing software package from ***Legendary Design Technologies*** (RS# 132), now lets you print professional-looking statements. Simply enter the pertinent information into the sample database fields and you can print out billing documents for your clients. Other enhancements include improved calculator functions that allow you to cut and paste values to the invoice, and a search option that lets you locate values as well as text. Owners of 1.0 can upgrade for $7.50 (free if purchased after November).

Xetec's **CDx software package** now features an updated collection of the Fred Fish library on CD-ROM. With 650+ megabytes, Fish & More III contains the most recent versions of freely distributable programs on Fred Fish disks #1-910. Current owners can purchase the disc for $25. (RS# 133.)

Music-X 2.0 ($199.95, ***Hollyware Entertainment***), the MIDI-compatible sequencer program, now supports more than a dozen additional MIDI commands. New modules are DeFlam, which removes the grace notes and finger crushes that occur in recording; RexxEdit, which lets you custom design macros in tandem with ARexx; and PrintEventList, which prints the event list of sequences for editing. (RS# 134.)

Turbocharged Products

GVP's **A1291 SCSI Kit module** attaches to the A1230 Turbo+ via the accelerator's DMA Peripheral Port. The kit features a SCSI driver that claims to attain transfer rates of 4.2MB per second. It utilizes Active Termination technology, which eliminates the need for SCSI termination and resistor packs. Other A1230 modules in the works are a 16-bit audio digitizer with direct-to-disk capabilities and a real-time video digitizer.

If you have a CompuServe account, you can access GVP's **Enhanced Graphics System (EGS) Developer's Kit** on line. The latest addition to GVP's on-line reference library covers current information on EGS development. It is located in the GVP section of the Amiga Vendor Forum. (RS# 135.)

IDD's **Amiga Smart Port Analog** ►

Graphic Content

The **3D Objects Collection for Imagine** ($24.95, ***Kinetic Designs***) contains over 120 public-domain and shareware objects in more than 20 categories (such as spacecraft, aircraft, and vehicles) for use with Imagine 2.0 or later. The 12-disk collection also features tutorials, utilities, and hints for using Imagine. (RS# 124.)

You can make your video titling picture-postcard perfect with **Nexus Pro** background picture sets (each $29.99) from ***Videoworld*** (RS# 125).

The AGA-compatible IFF backgrounds are available in various subjects, including travel (which features famous landmarks), and weddings (with parchment, scrolls, flowers, and so forth).

Dinosaurs may have been extinct for millions of years, but they are alive and kicking in the **Jurassic Collection for LightWave 3.0** from ***Dimension Technologies***. The collection contains four detailed dinosaur models, each comprising more than 20,000 polygons. Walk and run scene files are included.

Are you finicky about fonts? Take a look at ***E.M.Computergraphic*** of England—with over 100 volumes of PD and shareware fonts to choose from, there's sure to be something for everyone. You can also order fonts individually at £7.50 per disk through the Pick 'N' Mix service.

Fonts aren't the whole story, either. E.M.Computergraphic also offers collections of 256-color Public Domain images for AGA and 24-bit equipped Amigas. Prices for individual volumes of clip art or fonts range from £14-£16.50.

E.M.Computergraphic also offers the **Award Construction Set** (£29.99), an award- and certificate-creation program. It includes six headline fonts, eight body-text fonts, five seals, 11 borders, and 50 styles that you can modify to meet your needs. It is compatible with all Amigas including the A1200 and A4000. Additional fonts and styles will be available via data disks. (RS# 126.)

Trying to solve the mysteries of 2-D animation? Take note of **2D Tips 'N' Tools** ($75, ***HyC Graphics***), a ten-disk library of animbrushes, fonts, clip art, and more. Three disks cover ideas and techniques for animations, touching on a range of topics, including special effects such as water and fire. The font disks include animbrush fonts and typefaces for titling. Still other disks offer more than 40 brushes of characters and objects in various styles and resolutions. (RS# 127.}

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 92.

Upgrade disk claims to address the incompatibility between the Amiga Smart Port and many games, including Gunship 2000, Knights of the Sky, and FA/18 Interceptor. The disk promises to enhance playability with support for rudder pedals, analog throttle, and an enhanced flight mode. The upgrade is available on the IDD Bulletin Board System (318/365-2667) or directly from IDD for $6.

With the Smart Port upgrade you can add one of IDD's new game devices for race car and flight sims: **PC Pedals**, **PC Stick Shift**, and **PC Steering Wheel**.

PC Pedals ($219.95) adds three steel pedals for realistic gameplay. The box also includes four game device input ports and an expansion port for three additional modes.

The PC Stick Shift is a replica of a standard-transmission equipped automotive stick shift. The PC Steering Wheel is a reproduction of a sports car steering wheel. Both devices are spring centered to add a realistic "feel" to clutching, shifting, and steering in the game. Each also includes an adjustable clamping device to attatch to a table or chair. (RS# 136.)

Toaster Physics 101

You can master the "physics" of LightWave with the **Photon Accelerator**, a plug-in module, from ***Interworks***. It includes a nonlinear based scene editor and a 3-D character generator with pre-defined and user-defined character motions. With it you can create Star Wars-like credit scrolls and utilize special effects like jitter and pulsate. Also, you can load and save an "actor" (an object and its motions and morphs recognized as a single entity.) Photon Accelerator includes Interworks' Follow-Me-Motion effect—ideal for caterpillars, trains, and so forth. (RS# 130.)

Refined RGB

The **VideoScan** ($828.75, ***CompuVid***), an external genlock, includes a special effects generator to produce horizontal, vertical, circle, and inverted wipes. You can connect four monitors to it at the same time (it is compatible with multisync, RGB, S-VHS, and composite monitors). VideoScan is compatible with any internal genlock (such as the Video Toaster}. It can be powered via the Amiga or an external power box. It is available in both NTSC and PAL. (RS# 128.)

Bleary-eyed from interlace flicker? One solution may be the **AMIVGA video adaptor** from the English company, ***Advanced Micro Interfacing***. The AMIVGA (about $70) is a VGA adaptor for all Amigas that have the Super Denise chip. On any VGA monitor, it produces a steady 640x480 noninterlaced display, doubled to 960 lines for interlaced screens.

The black box, about the size of a deck of cards, simply plugs into the video port. Included is a 15-pin VGA connector and a pass-through video connector for standard Amiga CGA-type monitors.

A special VGA program must be run on power-up, either by booting with the AMIVGA disk, or by booting normally and then running the program. But, the computer must be rebooted before the VGA display is available. The program survives warm boots, however (like RAD), and it allows you to choose between VGA and standard Amiga display. (RS# 129.)

—*Don Maxwell*



ON-LINE SCAN

By Tim Walsh

When I need a quick update on the Amiga market, I let my modem do the walking. Both BIX and Portal offer sections for new-product news in their respective Amiga areas. Since both nets update these areas on an almost daily basis, you should check them frequently. Vendor sections deserve a once-over, too, as they typically deliver information straight from company techies.

Unlike its network brethren, Delphi relies on its link to the Internet to provide late-breaking news. CompuServe buries news in its Amiga forums, but it is worth seeking out. For a one-stop comprehensive catch-up, I turn to GEnie, where former Commodore employee and long-time GEnie cheerleader, Deb Christensen, presents the most creative compilation of on-line Amiga news.

News With a Twist

Amiga news takes a couple of different forms on GEnie. Required reading includes the "*StarShip* 5-MINUTE Weekend Newscast" from 6 PM to 3 AM Eastern Standard Time (EST) on Friday, or from 3 PM to 3 AM EST each weekend. News includes product announcements and messages from companies, rumors, trade show reports, and general information, such as tips on how to use GEnie effectively.

Both GEnie's Amiga libraries and Portal's Amiga Zone offer magazine sections that stock the Amiga Report International Online Magazine by Robert Glover. ARIOM's basic premise is to give an overview of what's happening throughout the industry. It consistently scores big download numbers on GEnie. It contains information about new products, and a quick overview of what's happening on BIX, Delphi, Portal, and the Internet.

The news is not all Amiga-specific: A large part of every issue consists of general computer chitchat and some decidedly noncomputer related items, from business news on company mergers to summaries of the latest Star Trek episodes. (On a sour note, I found it disturbing to read a reviewer's "joking" remarks of sending a letter bomb and phone threats to get a product for review.) While ARIOM touts weekly updates, the magazine does not appear every single week.

Getting the ARIOM file to work isn't particularly easy for beginners. After decompressing the ARCed AmigaGuide file, you'll find that the icon's Default Tool states "Multiview" is the required host program. You can get it working in a hurry if you have AmigaGuide (see "Linking Up With AmigaGuide," p.43 for details). Just highlight the icon, change the Default Tool from "MultiView" to "AmigaGuide" (make certain you have AmigaGuide on your hard disk), and it'll work nicely.

BIX
800/695-4882
617/354-4137

CompuServe
614/457-0802
800/848-8199

Delphi
800/695-4005

GEnie
800/638-9636

Portal
408/973-9111

AMIGA SPOKEN HERE

LAS VEGAS—

In contrast to the noisy sea of business suits that flooded the show floor, much of the COMDEX shop talk about the Amiga took place in low-key, private press gatherings in hotel suites around the city.

While Centaur used the Commodore booth in the Multimedia annex at the Las Vegas Convention Center to demo OpalVision, CBM executives powwowed with journalists and third-party developers at the recently furbished Luxor Hotel. Newly-appointed General Manager of Commodore's US division, Geoff Stilley, was on hand to outline marketing plans and to discuss strategies for a big Amiga CD32 roll-out at the upcoming Winter CES (also in Las Vegas).

Across the street at the Tropicana Hotel, members of the press got a first-hand look at a prototype of NewTek's Screamer, the RISC-based rendering machine for LightWave. The Screamer holds great promise for a possible introduction at the National Association of Broadcasters convention in April.

Stay tuned for further developments.

—TW

BUSINESS AS USUAL

Can't seem to locate business software developers? Chances are you're barking up the wrong tree. Check your facts against these company changes, and be sure to update your Rolodex, and it'll soon be business as usual.

A new name on the business software block, *The Amiga Professional Software Company* (TAPS) of Australia is actually a merger of two seasoned companies: AeroStar Industries and GPSoftware. TAPS now distributes the accounting programs Easy Ledgers and Service Industry Accounting as one unit—**Easy Ledgers 2**. The updated package will run on Commodore's new AGA machines and requires 1MB RAM and Workbench 1.3 or later. (RS# 120.)

Another accounting package, **Best Business Management 3.0**, is now distributed by *Clackamas Computers*. (RS# 121.)

If you've had difficulty reaching the *Gemstone Group*, distributor of MicroFirm, the business document-creation program, try the company's new address (64 Hollywood Drive, Madison, WI 53713) or call 608/221-4968. (RS# 122.)

CUSTOM CHASSIS

You can customize your auto from its upholstery to power windows, so why not your Amiga? With one of these expansion options from *CeV*, you can pick and choose just the right configuration of peripherals to suit your changing needs.

The **X-Pander Built Chassis Model 3AA—Desktop Case** ($270) and **Model 3BB—Midtower Case** ($290) adds power, drive bays, and A2000 slots (to add SCSI or RAM cards) to your A500 or A1000. The Desktop case includes 200 watt power (Midtower model has 250 watts), and three 5 1/4-inch and one 3 1/2-inch drive bays (Midtower model has an additional 3 1/2-inch bay.) The Desktop model is available with three A2000 slots or two Amiga slots and one video slot.

The X-Pander Built V-Slot is also sold separately at $90. It lets you add any genlock (such as the Video Toaster or OpalVision board) to any Amiga. Lines are available to add jumpers to access the special signals required by the Toaster. (RS# 123.)

FUTURE ENTERTAINMENT SHOW

LONDON—

The Amiga was well represented at the show despite the onslaught from Nintendo and Sega. Commodore produced a glitzy, all-singing, all-dancing stand, with the pride-of-the-place honors going to the Amiga CD32. Of the more than 100 titles promised for imminent release, only a handful were on display. Judging from the amount of interest shown, however, it looks as though CD32 is going to sell well. Outward signs are positive: Some of the larger multiple retailers have taken the new console on board.

The A4000 and A1200 were also available to those with lots of spare cash or a desire for a keyboard.

Third-party hardware support continues for the whole Amiga range. GVP showed its DSS8+ sampler and direct-to-hard-disk sampling software, due for release in January. GVP also talked of an impending 16-bit system for all Amigas. New Dimensions promoted its own direct-to-hard-disk eight-bit sampling software upgrade to TechnoSound Turbo, which features a much-improved menu system, a Tracker player, and MIDI support. A 12-bit system is on the way for less than $150 in the UK. For those with a few slots to fill in their Amiga 2000, 3000, or 4000, AlfaData of Belgium offered new IDE and SCSI-2 interfaces (starting under $100), as well as a high-speed serial port for use with laser printers and the like.

Software Showdown

Software continues to appear from all sides, with several new titles due for release by the time you read this. Pinball—Special Edition, a compilation of the two best pinball simulators (Pinball Dreams and Pinball Fantasies), is available for £34.99 from 21st Century Entertainment. Gremlin Graphics showed previews of Zool 2, the successor to the very popular Zool, in which the bouncy character we all know and love is joined by a companion called Zooz and a dog, Zoon! Also from Gremlin is Stardust, a version of the old favorite Asteroids, only in full-color and with several enhancements. Core Design showed Wonder Dog, a platform game converted from Sega Genesis—and very wonderful it is too.

Home and business productivity software was also about, the main "battle" being between Final Writer (SoftWood Publishing) and Wordworth 3 from Digita. The latter is the latest in a line of superb semi-desktop publishing packages due for release in January. Among other things, it allows text and graphics to be placed across page spreads for those who want to produce posters and the like at home. You can enter text in a small box, shadow it at various angles, and place it on the screen at will. As Wordworth 2 users are among the happiest of Amiga owners, the upgrade should be a winner.

For the Amiga owner who has everything, a new product from IL-Soft is a program for designing patterns for embroidery, knitting, and lace. It even tells you how much material to buy.

Psst! Did You Hear...

Talk in the press office revolved around the AAA chip set and 64-bit RISC Amigas, said to be getting closer by the week. Although no one claims to have actually seen the machines, rumors continue to fly, so hopefully something will be revealed in the near future.

With the CD32 being the only new console on display at Future Entertainment, it's not surprising that Commodore looked confident for the four days of the show. How this confidence will stack up against the 3DO and Jaguar remains to be seen.

—Stuart Menges

REVIE

24-bit character generator for the Video Toaster.

MONTAGE For the Video Toaster

InnoVision Technology, $499.95
Amiga 2000/3000/4000.
1.3/2.1/3.0 Toaster compatible (1.3 is not recommended).
Hard drive required.
Not copy protected.
Accelerator required.
Minimum system: Complete Toaster (two-monitor) installation, 8MB fast RAM, 10MB hard-disk space, 1MB chip RAM.
Recommended system: Same as minimum.

24-bit character generator for AGA Amigas, OpalVision, and IV-24.

MONTAGE 24 For the Amiga

InnoVision Technology, $399.95
Amiga 2000/3000/4000.
1.3/2.1/3.0 compatible (1.3 is not recommended).
Hard drive required.
Not copy protected.
Accelerator required.
Minimum system: 8MB fast RAM, 10MB hard-disk space, 1MB (2MB recommended) chip RAM. Requires an AGA Amiga, OpalVision, or Impact Vision 24 for direct display.
Recommended system: Same as minimum.

If you're in the market for impressive and flexible 24-bit, true-color character generation directly from your Amiga, you should take a look at MONTAGE. There are two versions: MONTAGE For the Video Toaster (M-VT) and MONTAGE 24 For the Amiga (M-24), which utilizes either Centaur's OpalVision board, GVP's IV-24 board, or the AGA chip set for high-quality display. The programs, recently updated to version 1.01, are almost identical in capabilities and interface. Both generate and composite text and graphics in full 24-bit, and both provide true-color display on all except an AGA-only system that uses SuperHires HAM-8 (256,000 colors) for output. As the operation and abilities of both programs are very similar, I will first cover the areas they have in common and then describe specific differences. Wherever I refer simply to MONTAGE, it means that the information applies to both programs. Otherwise, I will specify.

Character Action

Installing the six disks with the standard Amiga installation program is fairly simple. MONTAGE 24 For the Amiga requires you to select which of the three display devices you are using on your system. Because M-VT requires the Toaster to be running, it provides a convenient icon that both initiates the Toaster system and starts MONTAGE.

To locate the vendors of the products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 92.

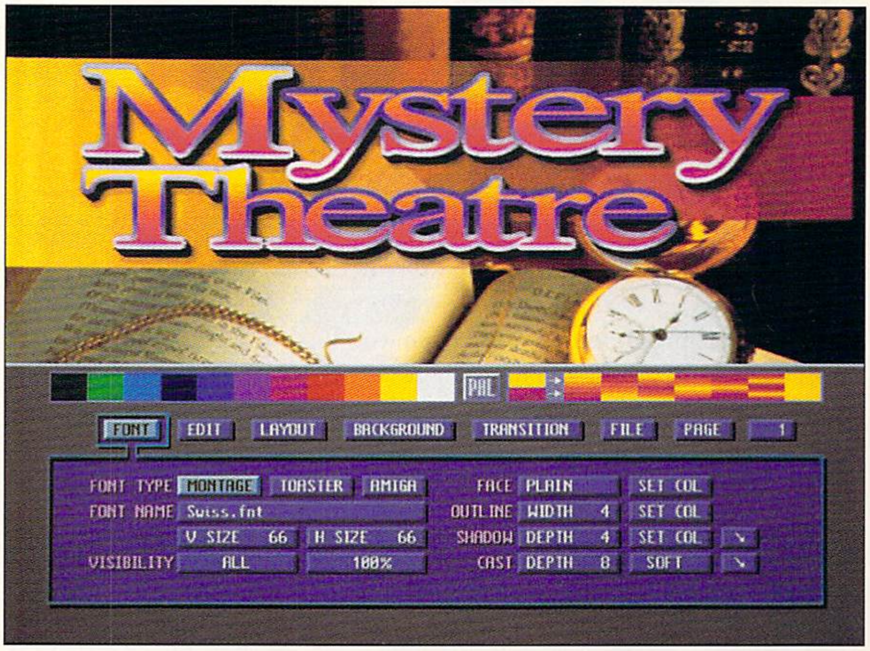
The interface screen is a high-resolution Amiga HAM display that provides both a fast refresh speed and a relatively accurate idea of how your layout is going to look. Menu selections appear on the lower half of the screen, and a right mouse click removes them. Entering your text is as easy as placing the cursor in a specific spot and typing. You can make your selections for font style, color, alignment, and so on either before entering the text or later.

MONTAGE ships with several high-quality MONTAGE fonts, and more are available from InnoVision. Currently, M-24 supports only MONTAGE fonts, while M-VT supports both MONTAGE and Video Toaster fonts, but only those. Although M-VT does not at this time support the large group of PostScript fonts available with Video Toaster 3.0, InnoVision has announced plans to release a separate PostScript utility ($195) that will allow the use of both PostScript Type 1 and Type 3, as well as Compugraphic fonts, from within either program. This utility should be ready soon.

All text entered using the well-designed MONTAGE fonts can be interactively scaled to any size, vertically, horizontally, or proportionally, and you can alter text attributes, including character spacing and letter kerning, on a letter-by-letter basis. You can enhance text with outlines, underlines, drop shadows, cast shadows, embossing, and fills

W S





MONTAGE 24 For the Amiga (top) gives AGA Amigas, IV-24, and Opal-Vision new options. The Toaster version (bottom) expands CG capabilities, sequence editing, and more.

with any one of several types of smooth gradients. Text can also have variable levels of transparency to reveal either live video or graphics beneath. Shadows are subject to controlled transparency, as well, with either soft or sharp edges. Furthermore, you can easily select the depth offset, direction, and color with buttons on the submenu.

The color-palette menu area contains only ten preset color boxes, but sliders that control either RGB or HSV values give you full control over all 16.8 million hues. There are buttons with which to copy, swap, or spread colors within the presets, along with boxes to control horizontal, vertical, diagonal, and even cylindrical gradient fills. You can use these colors and gradients for text, backgrounds, or boxes. MONTAGE even has a button for instantly adding bevels to boxes. MONTAGE also allows you to set up keyed layout pages, so that areas of whatever you set as the specific Key color will show through the underlying graphics or even through live video.

MONTAGE is also a high-quality graphics compositing tool. In addition to the fills mentioned, you can load graphics with controlled transparency and rotate them in 90-degree increments. You must keep in mind, though, that—as with most paint programs—once you have added the graphic item, you cannot alter it. You can, however, change text at any time during your layout. Also, buttons are provided for generating wallpaper backgrounds for the imported graphic, with full control over tiling and offset values. You can save your compositions for use in other work, or for later alteration.

In essence, MONTAGE enables you to lay out video-size pages (margins are adjustable, with the default being the video-title safe area). You add new pages with a press of the PgDn key, and you can then sequence them together for a presentation controlled by set timing, GPI trigger, or keypresses. Finding your way through a long sequence of pages is simplified by small thumbnail representations accessed via a click on the page-number gadget.

Now let's look at the interesting differences between the two programs.

MONTAGE For the Video Toaster

After installing the Video Toaster version of MONTAGE, you will find a new button on your Switcher screen for accessing the MONTAGE control screen. The video pages mentioned earlier are sequenced together using any of the Toaster Switcher transitions. Thus, M-VT is not only a character generator and compositing tool, but also serves as a sequence editor for the Toaster. When setting up your sequence, the program displays the Switcher control panel so that you may select a transition crouton. InnoVision strongly recommends that you have 2MB of chip and over 8MB of fast RAM if you want to use the new high-color transitions.

A major feature of M-VT is the excellent credit ►

roll. Instead of laying out individual pages, you set up one long page as a 4096-color credit roll with controllable speed. It is recommended, however, that you not include such things as soft shadows in the credit roll because of the intense processing power required.

M-VT can also load and save both IFF and Framestore-format graphics for use as backgrounds. In fact, loading Framestore files through an M-VT sequence is faster than natively through the Switcher.

Why take M-VT over the newly enhanced Toaster 3.0 character generator? Some major reasons already mentioned are the interactive nonproportional text scaling, soft-edge shadows, and layout screen. By contrast, the Toaster character generator requires you to generate each new font size and displays an outline only when working with the PostScript fonts. You should also realize that standard Toaster fonts are fixed bitmapped fonts that you cannot scale in either the Toaster or M-VT. The most compelling argument for M-VT, however, is probably quality. Both versions of MONTAGE utilize very sophisticated antialiasing techniques and control over alpha-channel transparency.The quality of output with MONTAGE fonts appears to be as good or better than that of many high-end dedicated CGs.

MONTAGE 24 For the Amiga

This version differs from M-VT in only two basic ways: You do not have the ability to create a credit roll, and you cannot use the Toaster transitions in a sequence. M-24 does provide transitions such as wipes and fades; the selections available vary according to the selected display device. In my opinion, with the exception of the AGA display, the transitions are not a reason to purchase M-24. OpalVision transitions pixelate poorly during execution, and sequences cannot be looped, while IV-24 offers only a couple of choices. This is not a shortcoming of M-24, but rather is due to factors relating to the design of the specific hardware.

Overall, I found both versions of MONTAGE trouble-free and capable of producing excellent output. The documentation, thorough and properly indexed, includes both tutorials and reference sections. The interface is easy to follow, and there are hot-keys for many functions, including copy and paste. In fact, the product comes with a hot-key template for your keyboard, so you don't have to memorize a new set of commands. You can also easily insert pages from previously created sequences into a new sequence. I stongly recommend MONTAGE as a high-quality character generator with a minimal learning curve.

—Steven Blaize

CanDo 2.5

***INOVAtronics*, $199.95**

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 1MB RAM, Workbench 1.3 or higher.**
***Recommended system:* Workbench 2.0 or higher, 2MB RAM, hard drive.**

Powerful interactive software-authoring system.

CanDo is an authoring system not unlike HyperCard for the Mac or Visual Basic for Windows. When you get the urge to create a small utility, there's a pretty good chance you can do it with

CanDo. Its capabilities are extensive. CanDo applications use gadgets supported by AmigaDOS, respond to mouse or joystick input, keypresses, and timers, and even send and receive ARexx commands through their own ports.

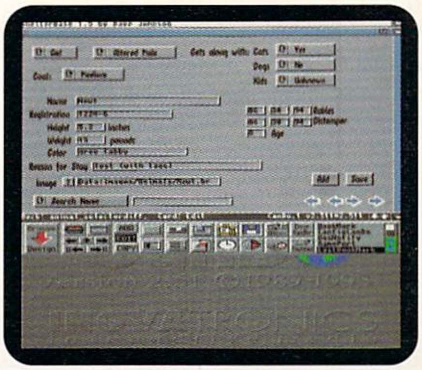
For those not familiar with earlier versions, CanDo provides an object-oriented programming environment, in which you simply define a window for your program, add buttons and menus, and then construct the rest of the user interface via graphic controls. These objects won't perform any functions, however, until you attach instructions to them in the form of BASIC-like scripts.

Creature Comforts

CanDo 2.5 has the look and feel of a mature, carefully updated program. Bookmarks, for instance, allow you to mark scripts for easy access. No longer do you need to navigate time after time through a myriad of buttons to reach the same script. If you know you'll be editing a particular script often, just bookmark it, and your access to it becomes a one-mouse-click affair. Another tool, SuperMover, removes hours of drudgery from the programming process. In one step, you can now select a group of interface objects and move them to a new location on the screen. Also, like the better word processors, CanDo's script editor now expands abbreviations as you type; for example, enter "SOS," and CanDo interprets it as "SetObjectState."

Among the most common uses of CanDo is the creation of some sort of database. The original version had a convoluted method of forcing applications to store data, but CanDo 2.5 supports databases in a big way. If you create a number of objects (text fields or buttons, for instance), extracting their values and storing them in a database is an automated process. For more complex applications, you can define multidimensional arrays of almost unlimited complexity, and neither their form nor their size need be declared in advance.

Earlier versions of CanDo had the capability of building applications with multiple windows that opened simultaneously. While this was a nice touch (assuming you mastered the art), a lot of work was involved just to pop up a requester such as "Do you really want to quit?" You can still



Design your own applications software with CanDo 2.5.

open multiple windows if you like, but CanDo now allows direct access to AmigaDOS's requesters, as well. A single line of code lets you open a standard requester with any number of gadgets. The program now uses the standard AmigaDOS file requester in its creations, and even supports multiselect mode, in which you can highlight more than one filename.

Taking Requests

CanDo clearly takes good advantage of ►

Workbench 3.0. A redesigned screen editor permits your application to use any available screen mode, including AGA, or to use an existing public screen. And regardless of whether you have 3.0, CanDo now uses AmigaGuide for its handy on-line command reference. Even better, your own CanDo applications can also call on AmigaGuide help files. (See "Linking Up With AmigaGuide," p. 43, for more on using AmigaGuide.)

Recognizing that Amiga MODs (music modules available through public-domain sources) are becoming a multiplatform standard, CanDo applications now support these compact stereo-music files. It's easy to queue up song playlists, pause and resume music, and modify the tempo and volume. This is a significant enhancement, especially for game design. Of course, CanDo also plays traditional eight-bit sound samples. The SoundSequencer allows you to glue a number of samples together into a complex, stereo-separated audio production that plays on cue.

AREXX CAPABLE

The true test of an authoring system like CanDo is twofold: Is it easy to create applications, and, once done, are they appropriate for professional use? As for the first question, just about anyone could sit down with CanDo and whip up a functional program an hour after opening the box. The tutorials, in fact, allow you to do just that. Even moderately complicated projects are not beyond the ability of beginners, although the more you ask of CanDo, the more conversant you must become with its scripting language. Happily, CanDo is fun to use, so fledglings are more likely to delve into its subtleties than those of a typical programming language.

As for the second question, CanDo gets a resounding "yes." On my hard disk, I have a dozen assorted programs that I wrote with CanDo, ranging from the odd utility to a fully functional database. I've even built front-ends for Shell-based software, passing data via ARexx. And now that the program supports real AmigaDOS requesters, you'd be hard pressed to distinguish a CanDo application from one compiled in C.

CanDo has always offered powerful animation tools, particularly when using DeluxePaint-style animbrushes. It now supports animbrush objects, which are little more than brush animations to which you have synchronized events (such as sounds, other animations, or any kind of program control). Describing the motion of the animbrush is as easy as dragging the mouse around the screen, and you can later edit the path point by point if you wish.

While CanDo does allow you to play full-screen animations, they must be controlled from a separate utility, AnimManager, which communicates with CanDo through an ARexx port. Using AnimManager, you can alter the speed and direction of an animation, as well as synch events to animation frames and even add "hot spots" to the action for user input. It works, but it's not as seamless as CanDo's internal support for animbrushes.

CANDO COOKBOOK

The aptly named CanDo HowTo Book fills a three-ring binder, in which you'll find 400 pages of instructive tutorials, thorough overviews, references, and an index. The reference section contains all of the commands, functions, and variables supported by the CanDo script language, organized so logically that the index could almost be omitted. An index there is, however, and it includes both commands and general topics. If you

don't want to bother with the book, an equally complete and context-sensitive AmigaGuide help file serves as an online coach.

CanDo's shortcomings are few. In the interface department, I long for better support for AmigaDOS's handy rollover buttons, which CanDo requires you to jury-rig by hand. Also, while I appreciate the AmigaGuide support, it would be nice if CanDo offered a tool for creating the AmigaGuide help files themselves, as many inexperienced programmers haven't mastered the technique. INOVAtronics should make it a priority to make building multiwindow applications easier.

Currently, Helm from Eagle Tree Software (reviewed Jan. '94, p. 20) and AmigaVision from Commodore are the only alternative products for creating your own programs without resorting to conventional programming. Compared with the competition, CanDo is a worthy contender. Using it, you'd probably impress yourself and others with your newfound ability to make effective Amiga software.

—Dave Johnson

PEGGER

***Heifner Communications*, $99.95**

All Amigas.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 2MB RAM, hard disk.**
***Recommended system:* 2MB or more RAM, hard disk, 68030 or 68040 processor.**

JPEG graphics-compression system.

Once measured in hundreds of thousands and now increasingly often in millions of bytes, computer graphics are rapidly expanding in size. Anyone who works with 24-bit images knows their proportions can quickly fill your computer's storage space, especially when creating multiframe animations. Heifner Communications' answer to this hard-drive congestion is PEGGER, a JPEG-compression program that allows you to increase the number of images you can store on your hard disk or other storage device by ten times or more.

JPEG, created by the Joint Photographic Experts Group, is an adjustable graphics-compression scheme that allows you to fine-tune the quality of images on a scale of 1 to 100. At settings of 50 or below, you can compress a 1MB graphics file down to 34K or less, but with a corresponding fuzziness and loss of detail. A setting of 85 to 90 percent with a compression ratio of roughly 10 to 1 shows little or no discernible change for the majority of images. At a setting of 100, most compressed images are virtually indistinguishable from the originals, yet they'll be about one-quarter the file size. Because JPEG permits the removal of some graphics information, it's referred to as a "lossy" compression scheme.

Most newer Amiga image-processing programs load and save JPEG files, but many of the programs that artists and animators work with—such as LightWave, Imagine, DPaint, and Brilliance—support only larger 24-bit formats such as IFF24 and the Video Toaster's Framestore format. You can save the files in IFF24, then come back later and shrink ►

them—using a program such as ADPro or ImageFX—and then expand them as needed, but that's a hassle. PEGGER makes all of this easy by sitting in the background and converting files to and from JPEG format on the fly.

Perfectly Pegged

PEGGER installs with the standard Commodore Installer program, and you launch it manually or drag it into the WBStartup drawer so that it will always be available when you boot. Clicking the PEGGER icon actually launches three tasks: CJPEG, the JPEG compressor; DJPEG, the decompressor; and SNOOP, the utility that adds JPEG capabilities to other programs.

These utilities support conversion to and from JPEG for a variety of high-color formats: IFF24, the standard Amiga 24-bit format; the Toaster's own Framestore format; HAM8, the eight-bit, 262,000-color Hold-And-Modify standard supported by AGA machines; and DCTV, in three- and four-bit formats, with or without NTSC filtering.

CJPEG and DJPEG allow you to manually compress files, either singly or in batches. File selection and option setting are handled with easy-to-use, Amiga-standard graphical interfaces that pop up when you click the CJPEG or DJPEG AppIcons, or when you drag a graphics file onto the icon. Converting large numbers of files in either direction is a snap.

PEGGER's real power comes from the SNOOP utility. You simply tell SNOOP to watch certain directories that contain images. You can choose to convert all files saved to that directory to JPEG, convert all files loaded from that directory to any of the PEGGER-supported high-color formats, or both. Each directory can have a separate setting, so you might have one where you convert files when loading and saving—ensuring that they'll always be stored in JPEG format—and another where you convert only files you load into your paint program, so you won't lose precise details you've added when you resave the file.

It's easy to toggle SNOOP off temporarily for individual directories. Without this ability, if you tried to copy a number of JPEG files from a SNOOPed directory with a directory utility, they would be expanded into a larger format when they reached their destination.

SNOOP worked with everything I tested it with, allowing DeluxePaint 4.6, Brilliance, and DCTV to load and save JPEG files directly. The telling test was when I rendered a series of small images in Imagine and set the program to save the files in IFF24 format. Without PEGGER active, the 25 images took up just over 9MB of disk space; with PEGGER set to 90 percent quality, the same images occupied only a single megabyte of space and were virtually identical when displayed on the screen. Toaster users will be ecstatic to see the typical Framestore size go from around 720K to about 70K. PEGGER is smart enough to ignore unsupported formats, such as 16-color and the older 4096-color HAM pictures.

Further Enhanced

PEGGER's JPEG capabilities are enough to justify its purchase for many Amiga users, but the program doesn't stop there. It also has an ARexx interface that lets you do further image processing on your files by accessing other ARexx-capable programs. You can run up to four scripts automatically from SNOOP: individual scripts before and/or after loading a file, and before and/or after saving a file. Along with image processing, other potential uses for this capability include sending IFF frames automatically to an

ANIM-builder before they're compressed, or displaying them to a single-frame recorder as they're saved.

PEGGER is a real boon to DCTV users. Many programs won't load DCTV files, but you can set PEGGER up so that any DCTV files are stored as JPEG when you save them, yet are expanded to IFF24 format when you reload them. In that way, you can access the files from DCTV Paint—and also from programs such as DeluxePaint or PageStream—without having to convert them to another format first.

The thorough and well-written manual includes tutorials that introduce you to the program's features, a quick-reference section and detailed explanations of the interface and ARexx commands. It's clear that the program's designers tried to anticipate and eliminate any quirks. For example, if you convert a HAM8 picture to JPEG format, PEGGER stores the base palette from the original HAM8 image in the JPEG file. This not only ensures that optimized palettes aren't lost, but also helps when assembling animations from frames that must share a common palette.

Also, you can set individual compression rates for different directories, so you can maintain the highest quality for some images, but use more compression on graphics that don't need to be stored as precisely. Finally, PEGGER works on the picture in sections, so it doesn't gobble megabytes of memory when processing pictures.

I encountered only two problems with PEGGER 1.2: HAM8 brushes stored to a SNOOPed directory came back scrambled when reloaded, and when I set it to automatically append a .JPG extension to files, it refused to replace files that already had that extension. Both problems are easily circumvented. Early versions of PEGGER had problems with Toaster Paint, DPaint AGA files, and DPS's Personal Animation Recorder, but Heifner quickly released a freely distributable patch (V1.2) that addressed those issues.

Slow Going

JPEG compression requires some intense calculations, and the load times of JPEG images can be painstakingly lengthy, especially on slower machines. Load times on an Amiga 4000 were increased by 30 seconds or more, depending on the size of the picture. On a stock Amiga 1200, there's time to drink a can of Jolt and maybe devour a couple of Twinkies while your graphic loads. When saving pictures, PEGGER processes the file after it's saved in its native format, so saves take no longer than they would without PEGGER running.

PEGGER is, however, the fastest JPEG processor I've encountered for the Amiga. Load times were only marginally faster than ADPro, but it was nearly twice as fast at saving files—and that doesn't count the time saved by automating the processes. If you're batch-rendering files or creating animations from JPEG frames, the extra time probably won't matter. If time is of the essence, you can easily disable PEGGER or copy the files to a non-SNOOPed directory and then compress them when you've finished working with them.

If you're an animator whose hard drive is almost full (is there any other kind?), you'll love this program. It is a must-have addition to the tool chest of anyone who works with 24-bit images.

—Denny Atkin ►

MovieMaker

Interactive Video Systems, $895

A2000/A3000/A4000.
2.0/3.0 compatible.
Hard drive required.
Not copy protected.
Accelerator compatible.
Installation: **easy.**
Minimum system: **4MB fast RAM, 2MB chip RAM, hard drive.**
Recommended system: **16MB RAM, A4000, SCSI-2 hard-disk controller, large-capacity hard drive.**

Nonlinear animation- and sound-editing system with player.

A couple of years ago, IVS showed parts of the movie *Back to the Future III* at an AmiExpo I attended. What looked like videotape output was actually being played in real time from a hard drive. Though I spotted traces of digital imagery, it was quite convincing, and as a video producer and Amiga artist, I was appropriately impressed. With MovieMaker, I am now able to play that same demo with CD-quality stereo sound on my own Amiga 4000/040 and DCTV.

MovieMaker provides nonlinear editing of Amiga images, animations, and digitized audio into "movies" you play directly from hard drive. It comes with the PeriSound board and Audio Editing System software for digitizing and editing stereo audio. PeriSound is an expandable half-length Zorro II card with stereo RCA input and output connectors.

Feature Attractions

MovieMaker uses a mouse-driven control panel with buttons that access other screens of buttons, mostly for file I/O. There are no pull-down menus, but keyboard commands abound throughout the interface. MovieMaker stores your rendered frames and animations in its own MovieMaker format on non-AmigaDOS hard-drive partitions prepared by the MMUtils program.

Stored footage is represented by a timeline on the control panel. To produce a movie, you visually scroll through the footage by using the keyboard or mouse to slide a marker along this timeline. Your footage is displayed on screen as if you were winding it through a film editor, like a moviola. You simply mark, cut, and paste sections from this timeline into the desired order on your new movie timeline. It's that simple.

The "movie" you are producing is actually a file describing the order in which the raw footage is accessed and played back from the hard drive. You can make as many different "movies" as you want from the same raw footage, for you're not actually altering the raw-footage images.

PeriSound digitizes sound in stereo from 17.64 KHz to 48 KHz (DAT) sampling rates. MovieMaker loads this audio as a timeline, so you can edit it into your movies using the same cut-and-paste procedures as for editing movies. (Do this *after* making the movie, as audio becomes part of the frame information.)

MovieMaker can export images and animation sequences as AmigaDOS images and ANIM files so that you can play them with other software. You can also export your edited audio tracks from movies as separate sound files. The timing counters are very flexible. They will display SMPTE rates of 30 frames per second (fps), 25 fps, and 24 fps, or film rates for 16mm and 35mm in frames per foot. In addition, they can show elapsed seconds, hours/minutes/seconds, or, in the case of audio, even samples per second. Anyone should be able to find a timing display that he or she is used to and comfortable with.

Behind the Scenes

Film-production crews know how much work really goes into just a few seconds of finished movie. To the uninitiated, MovieMaker gives a taste of this necessary legwork. The storage of images and animations in the special format that allows MovieMaker to play the images back at blazing speed requires planning and up-front time. Depending on whether you are storing a few frames of HAM images or a few hundred frames of 24-bit images, the time required can be a few seconds or a few hours. You can multitask, however, while MovieMaker works in the background. The wait pays off because once the images are converted, access seems instantaneous.

The price you pay for this speed is the hard-drive space you use for MovieMaker's special non-AmigaDOS partitions. Raw footage cannot be stored or accessed any other way, and only MovieMaker can access these partitions.

At first, the manual appeared to be well organized. However, reading it left me a bit dumbfounded. For example, it told me that movies are simply instantiations [sic] of the raw-footage file and are stored as AmigaDOS files. Furthermore, the manual doesn't explain anything about available image formats. When I loaded a 752x480 24-bit image for conversion and storage, MovieMaker offered only three-bit or four-bit DCTV format, with or without interlacing. I didn't really want my finely detailed, 24-bit graphic to look like a DCTV image, but I apparently didn't have any other choice. My A4000 liked this choice about as much as I did, since it immediately offered me the choice of suspending or rebooting.

Hold That Script!

MovieMaker's method of editing allows the reuse of animation segments or single frames (title screen or diagram) without wasting storage space. Adding audio is a time-consuming task. You must edit digitized audio into the raw footage, where it becomes part of each frame. Reusing the same footage brings along the same snatches of audio, riding piggyback on the video. This is handy if you want dialogue to match up with the video, but if you want different audio each time, you have to store multiple copies of the footage, each with the new audio track dubbed in. This drawback, however, is fairly easy to work around.

On a sad note, MovieMaker makes no reference to ARexx, and lists no port or commands. It does, however, have an Auxiliary Environment button that might link the program through ARexx or other means in the future. IVS promises ARexx support with the next revision.

Going Over Budget

The factors that give MovieMaker the speed to play files at 30 fps are image size, SCSI interface speed, the hard-drive controller, CPU speed, and chip RAM bandwidth. Hard-drive capacity determines the length of your productions. It's obviously not a low-budget proposition, as you'll need an '030 or '040 processor and a SCSI-2 controller for maximum performance. I used Advanced Systems & Software's Fastlane Z3 SCSI-2 controller ($599) on my A4000. Furthermore, a 1GB hard drive with a high transfer rate (24 megabits per second or higher) is in order for optimum performance and capacity—and then there's MovieMaker's $895 list price.

That doesn't mean you can't do neat stuff with a standard SCSI interface and a quality 200MB hard drive on an A2000/030 or A3000 by paying careful attention to image size and using DCTV. In fact, MovieMaker appears to work nicely with DCTV, and might breathe a little life into that aging product.

That's a Wrap

MovieMaker is an interesting product that performs some amazing feats when matched with fast hardware. It would have been a box-office smash if it had been released two years ago, but the

hardware was not up to speed back then.

Where will MovieMaker find its audience in today's Amiga market? Well, if IVS adds extensive support for ARexx in future versions, the multimedia folks will probably be standing in line for a MovieMaker ticket. Concerning its value, try to find something better on any computer platform, at anywhere near its price range. By comparison, MovieMaker makes MS-DOS and Mac "movies" look like flickering and jerky silent films.

—Fred Hurteau

DeluxeMusic 2.0

***Electronic Arts*, $129.95**

All Amigas.
1.3/ 2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system:* 1MB RAM.**
***Recommended system:* Accelerator, 4MB or more RAM, printer, hard drive.**

General-purpose music-composition software.

Electronic Arts put the Amiga on the computer map way back in 1986. Its trailblazing DeluxePaint showcased the unique graphics capabilities of the machine, while DeluxeMusic demonstrated the Amiga's amazing (for its time) audio possibilities. While DPaint went through numerous upgrades and enhancements over the years, DeluxeMusic never received the same level of attention. What once qualified as unique features in a computer music program steadily became commonplace. As DeluxeMusic's uniqueness began to wane over the years, its activity became limited to public-domain offerings.

What's New?

To the delight of computer-music composers everywhere, DeluxeMusic has been overhauled, cleaned up, and propelled squarely into the '90s. DeluxeMusic 2.0 maintains a familiar interface on a custom screen, while addressing a long list of complaints, shortcomings, and suggestions for improvement.

The manual kicks things off with a "What's New?" section for those making the step up from 1.0 to 2.0. This is merely a brief discussion of changes, however; you'll still need to peruse the manual to uncover all the new features, among which are extensive ARexx, MIDI, and Workbench 2.1/3.0 support. The program supports all new AmigaDOS keyboard conventions, screen resolutions and palettes, and you can not only open multiple scores, but also cut and paste between scores.

The tutorial section of the manual reviews the main features of the program in a thorough yet understandable manner. A variety of playback options now exist. DeluxeMusic 2.0 provides up to three different types of visual feedback: flashing notes, a player-piano strip that highlights the notes on a keyboard, and a measure count that changes as the song progresses.

You can define any set of measures as a section that can then be repeated. This is helpful when you're trying to decipher a particularly cryptic passage or to solo over a righteous vaudevillian vamp. Tempo changes can be inserted throughout the piece, and you can even turn off the sound completely for specific measures. Useful for troubleshooting obtuse and undesired harmonic disturbances (bum notes to you!), this latter ►

feature also helps beginners develop a musical ear.

Like its predecessor, DeluxeMusic 2.0 makes use of the Amiga's internal sound capabilities. You can load samples into a "ready" list for insertion anywhere in the score you please. You can also change sounds throughout the score, as well as pan positions and a variety of playing styles, including legato, sforzando, and staccato, to name a few. You can apply style changes to selected notes in the score or to selected instruments. While volume changes can be gradual, all of the instrument and sample changes are static. You cannot, for example, create dynamic panning over a period of time or gradually morph the sound of a piano into that of a trumpet.

The program lets you add or delete entire staves and clefs of music. It also allows you to create up to 48 staves of music per song, although you'll be able to hear only four notes at a time using the Amiga. You can change time and key signatures as often as you like throughout the song, and you can change the screen and printout appearance to best suit your working style and output devices.

Using DeluxeMusic 2.0 is a mouse-intensive activity, even though you can enter note information from a MIDI keyboard using a program such as NerveWare's RiffGrabber. The section in the manual on entering and modifying music thoroughly explains how to make your music look and sound right. Simply click on a note or rest value, then place it on a staff or click on the on-screen piano keyboard. Clicking on a note activates it to be edited, transposed, stylized, and so on.

Chords can be inverted up or down, and you can also insert, delete, split, join, or realign measures, and set repeats and first and second ending measures. In addition, word-processor type editing is also possible on individual notes, chords, or measures. The program allows you to add sharps, flats, naturals, dots, triplets, ties—in short, almost anything a musician does with a pencil on staff paper. This includes adding lyrics to the score—an absolute necessity for lead sheets.

Any system font is acceptable. Select the text tool, click wherever you want on the screen, and begin typing. Now included in 2.0 is the new Guitar Fret font, which lets you place guitar tablature notation anywhere in the score. Traditional notation output has always been one of the strongest features of DeluxeMusic. The latest version supports all Preferences printers, though you'll have to experiment a bit to get the best results on your system.

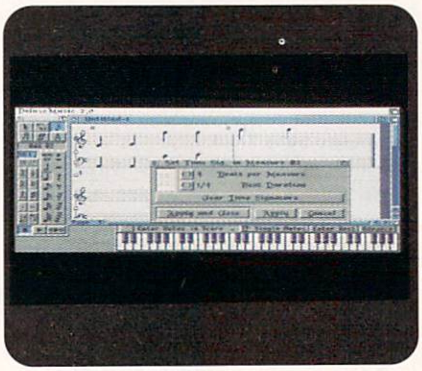
AREXX POWER

ARexx support is new in this version of DeluxeMusic. A powerful macro function is integrated into the program, letting you combine commonly used commands and then assign them to a function key. Macros will record everything but mouse clicks, so your most involved routines can be reduced to just a few key punches and mouse clicks at most.

While it still supports the SMUS standard, the program finally addresses one of the main shortcomings of that format—the inability to save all sound files with a song. Version 2.0 still loads the older DeluxeMusic, SMUS, MIDI, and Music-X files, but it can now save in the new CMUS file format as well, allowing you to embed samples into the score. The CMUS format is also required for the included DeluxeMusic Player, a freestanding, freely distributable program that enables you to play CMUS files.

SOUR NOTES

I was not able to get DeluxeMusic 2.0 to print to my laser printer. My printer indicated it was "Processing Data" the whole time, but nothing came out, whether in HP or PostScript mode. I discovered that in order to print, you must select Negative in your graphics Preferences to achieve a positive output. I was also informed that DeluxeMusic 2.0 shares this peculiarity with DeluxePaint. My Panasonic KX-P1124 dot-matrix did, however, produce printouts without fail.



Play that funky music right with DeluxeMusic 2.0 from Electronic Arts.

A font button resides on the program's interface and clicking on it with the mouse brings up a requester. The program's Guitar Fret font seemingly displayed text only in Topaz font, until Electronic Arts revealed that Guitar Fret alters only a few characters.

DeluxeMusic 2.0 comes with a 168-page manual bearing a fine set of tutorials, a complete index, and first-rate descriptions for tools and requesters. I did find one shortcoming, though: a lack of clarity about how to set up and place the tablature in the score.

I had some concerns over how the program handled sections of music, too. Being able to define a section is handy, but it leaves me pondering why you can't define multiple sections. Defining half a dozen linkable sections of music, with user-definable repeat ranges, could make for a more powerful composition and arranging tool.

It would also be an improvement if the player utility could read and convert MIDI files and MOD-formatted files. The convenience of these play-only utilities is getting more and more compromised with all the proprietary formats that are floating around in the public domain. While DeluxeMusic 2.0 records pitch values accurately, it still can't record timing values in a meaningful way when you play live from your MIDI keyboard.

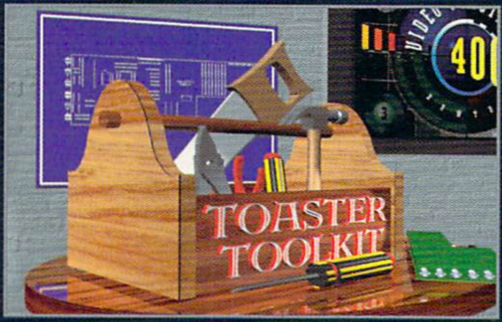
IN CONCLUSION

Offering full support for The One-Stop Music Shop (Blue Ribbon SoundWorks), DeluxeMusic 2.0 does mix well with at least one popular third-party hardware package. If you're looking strictly for a MIDI sequencer, you're probably better off with the software from Dr. T's or Blue Ribbon. KCS and Bars&Pipes are designed to handle anything from simple step entry to full-blown multimedia presentations; DeluxeMusic 2.0 is not. My experience aside, the best reason to consider this program is for its notation features. Bar&Pipes Professional 2.0 still doesn't cut it as a notation program, and Dr. T's has gone so far as to offer The Copyist, a dedicated notation program.

There are some further concerns, however. Electronic Arts cautions that its MIDI-file importation is a bit shaky at this time. You can take your chances trying, or you can enter your score into DeluxeMusic 2.0 by hand or import it as a SMUS file (some Amiga sequencer packages can save in SMUS format).

These issues aside, DeluxeMusic 2.0 will probably satisfy those who asked for it. It is cleaned up and is now a '90s program, it fills a unique niche in Amiga software history, and it certainly deserves a look if you like to make music on your Amiga.

—Rick Manasa ■



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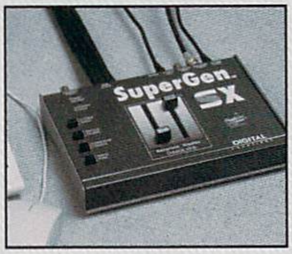
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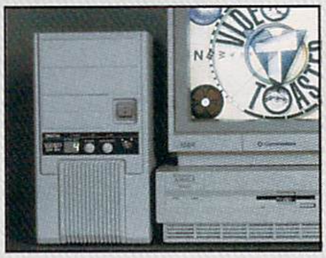
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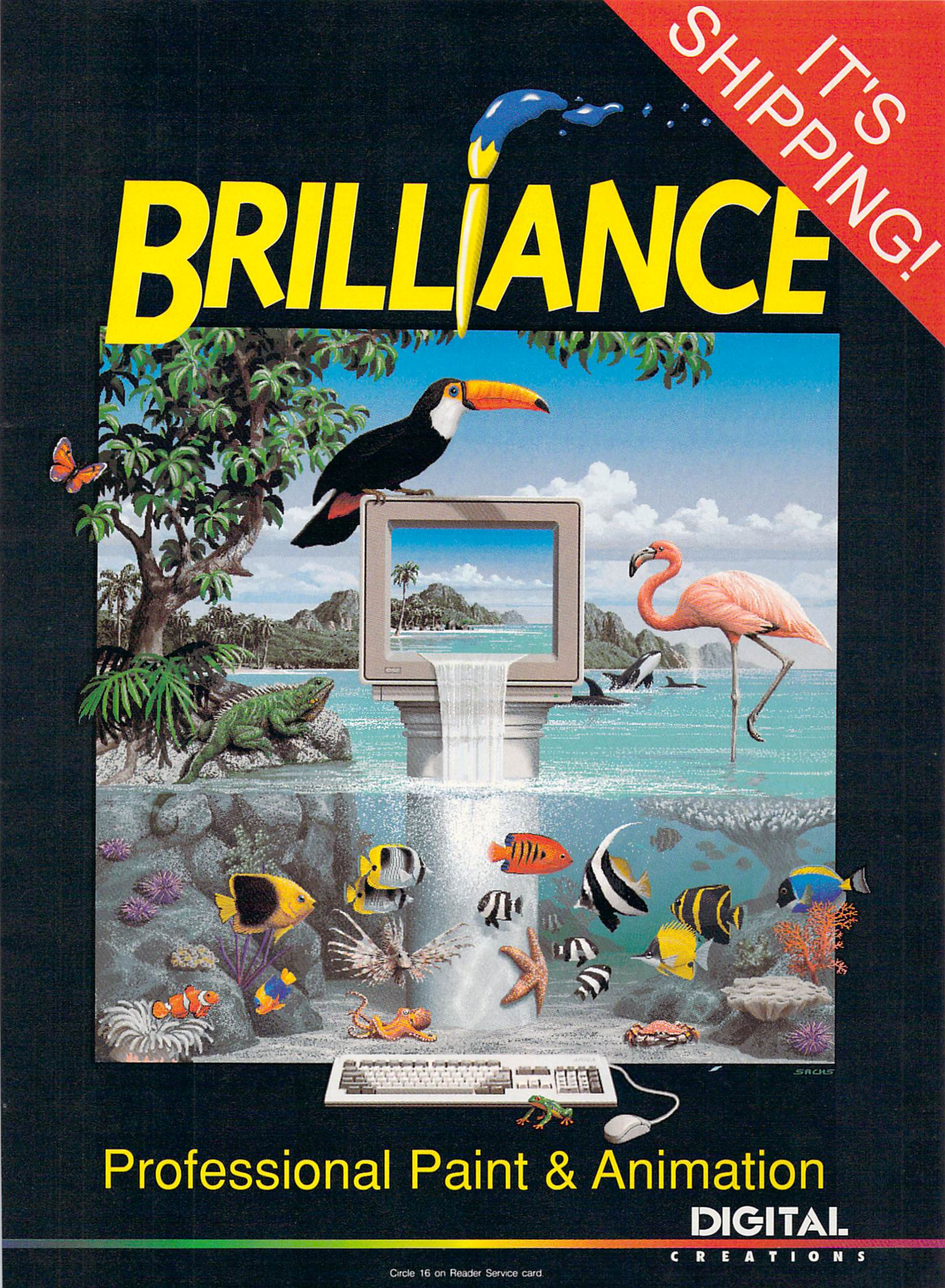
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AmigaWorld's Guide to AGA Products

100 items specially designed

for use with your A1200 or A4000.

IF YOU OWN an AGA Amiga or are thinking of buying one, you know that most current Amiga software will run on A1200s and A4000s—except for certain games and applications that balk at accelerated processors. And as for hardware, anything—old or new—that fits onto the expansion ports common to all Amigas (such as audio and video digitizers that hook up to serial ports, input/output expanders that add extra parallel ports, and so on) will work on the new machines. Furthermore, most Zorro II/III cards that fit in the A2000 and A3000 also work with the Amiga 4000.

But if you like to use the special features of your AGA computer, you may be wondering which of the many products on the market take particular advantage of it. Which give you those great high-color displays? Which run in Productivity mode? Which are custom-made for your Amiga model? Many products advertise that they are "AGA compatible," but just what does that mean, given that AGA machines offer selectable chip sets for downward compatibility?

We've been investigating this issue and are pleased to present a guide to more than 100 products that we know take advantage of, or at least acknowledge, AGA features. These are software packages that employ the AGA chip set, hardware that comes with AGA software, or boards that are either A1200 or A4000 specific.

We've broken the field into four main categories: Business and Productivity Software and Utilities (pp. 26–27); Graphics, Animation, Video, and Music Software (pp. 27–29); Video, Graphics, and Sound Hardware (pp. 30–31); and Expansion Hardware, which is divided between A1200 (pp 31–33) and A4000 (p. 33) items. Besides describing the products, we've tried to give you an idea of how they employ AGA features.

At the end of the article, we offer a glimpse of some of the new products you can expect to see coming out for AGA Amigas. But it's only a peek. More developments are under way, but the manufacturers are not yet ready to talk about them. We'll be sure to cover them as they become available.

Remember: This is not a guide to all products that work on AGA machines. That kind of listing would surely take up the entire issue. These are products that have either been developed or revamped with AGA machines in mind. Also realize that not all software benefits you by employing AGA features. A music program that puts up a high-color display, for instance, might suffer in terms of performance. ►

BY SHELDON LEEMON, DENNY ATKIN, DAVE JOHNSON, FRED HURTEAU, AND THE EDITORS OF *AMIGAWORLD*

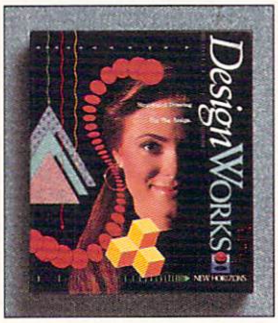
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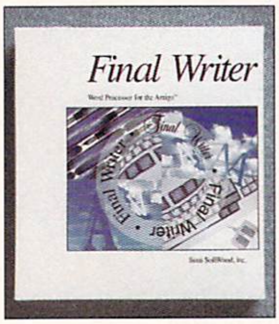
Business and Productivity Software and Utilities

AmigaVision Professional
$399, ***Commodore***
Commodore's multimedia authoring software is a powerful programming environment that is easy to use, but much to the company's embarrassment, the first versions weren't compatible with CDTV or the new AGA computers. This version is AGA capable, but just barely. You can now load pictures saved in AGA modes, but there are still no controls for creating your own AGA-mode screens from within the application.

CanDo
$199.95, ***INOVAtronics***
An object-oriented authoring system that allows even the novice programmer to design Amiga applications, CanDo provides access to most AmigaDOS features, including all varieties of buttons, menus, and requesters. The newest version, 2.51, lets you build applications on any legal screen, including 256-color and HAM8 displays. Applications can also make use of AmigaGuide help files.



DesignWorks
$75, ***New Horizons***
DesignWorks 1.0 is a structured-drawing program that's notable primarily for its simplicity and bargain price. Only PageStream can import its outline-format images (not even ProWrite supports its IFF DRAW format), although you can export bitmapped images for use with other programs. AGA support is limited to the program's ability to run in SuperHires and Productivity modes; there's no 256-color support.



Directory Opus
$99.95, ***INOVAtronics***
Probably the most full-featured file-management program available for the Amiga, INOVAtronics' Directory Opus 4.11 can display nearly any file, including AGA still images and animations. The program can run in high AGA resolutions, allowing you to see more files onscreen. You can program the customizable buttons with built-in functions or your own ARexx macros, but there are so many file manipulations built into Opus that you'll have a tough time finding new things for it to do.



Final Copy II
$99.95, ***SoftWood***
Final Copy is the word processor of choice for graphics-intense output. It is part page-layout program, in fact, with its style sheets, structured-drawing tools, and variable zoom. Final Copy runs in any resolution and any number of colors (up to 256) supported by the AGA chip set, though its option to display graphics in gray is generally the most useful.

Final Writer
$199.95, ***SoftWood***
A superset of Final Copy II, Final Writer is a powerful and highly customizable word processor that features extensive ARexx support, an auto-save function, and good font handling.

Flow
$110, ***New Horizons***
Flow 3.1 is a traditional idea-outlining system. It nests your text in multiple levels of indents, up to 16 deep, and shows or hides any part of the document you choose. Flow can run on the Workbench to take advantage of high-resolution AGA displays, but because you cannot embed graphics within a Flow outline, high-color support isn't particularly relevant.

Gold Disk Office 3.0
$199.95, ***Gold Disk***
Five business-oriented programs (a desktop publisher, word processor, spreadsheet, database, and graph generator) under one roof. All take advantage of the AGA chip set, especially the desktop-publishing software, which also uses Compugraphic fonts.

PC-Task 2.0
$39.95, ***DevWare***
This software-based PC emulator lets you run MS-DOS programs on your Amiga. It provides VGA emulation on any Amiga and offers AGA owners something special: Super-VGA emulation.

PageSetter 3
$99.95, ***Gold Disk***
Gold Disk's entry-level page-layout program may not have all the features of Professional Page, the company's high-end desktop-publishing product, but with support for Compugraphic outline fonts and bitmapped and structured graphics, it has more than enough power to satisfy those who need to make the occasional flyer, invitation, or sign. The casual user will also be satisfied with the price (about half that of full-blown publishing programs). On AGA machines, graphics can be displayed with up to 256 colors on screen at once.

PageStream 3.0
$395, ***Soft-Logik***
PageStream 2.2 is a high-powered page-layout package disguised as an easy-to-use Amiga program. PageStream's many strengths include flexible layout and drawing tools, a wealth of importable graphic formats, and HotLinks—a utility that lets you edit text or graphics in another program and have the changes immediately updated in your PageStream document. You'll have to wait for PageStream 3.0 (due to ship soon) for WYSIWYG color displays, but PageStream already runs on AGA screens, including Super72 800x600.

ILLUSTRATED BY ISTVAN BANYAI

Professional Calc 2.0
$199.95, ***Gold Disk***
The most professional and up-to-date spreadsheet for the Amiga, ProCalc adds such features as full ARexx support to the usual complement of mathematical manipulations. Why add AGA support to a spreadsheet? For charts and graphics, of course. ProCalc formerly used dithering for charts with more than eight colors, but this version lets AGA owners create a pie chart with up to 256 slices, each in a different color. You can also select any screen mode from the display database, including large scrolling screens.

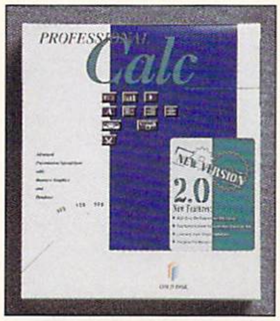
Professional Page
$295, ***Gold Disk***
Pro Page 4.1 is a high-level desktop-publishing program that supports everything from dot-matrix printers to professional imagesetters. A pioneer in color DTP, Pro Page 4.1 loads 24-bit images and sports complete color-separation support. ARexx programmability and a full suite of included macros gives the program great flexibility. You can display your document in 256 colors in various AGA resolutions, including Super72, making proofing color documents on screen much easier.

ProWrite
$99.95, ***New Horizons***
ProWrite 3.3 is one of the Amiga's most powerful word processors. It has a full set of editing tools, a large dictionary and thesaurus, and support for multiple columns and Compugraphic fonts. ProWrite runs in any mode except HAM8, though its clumsy palette controls occasionally make high-color displays a challenge to configure.

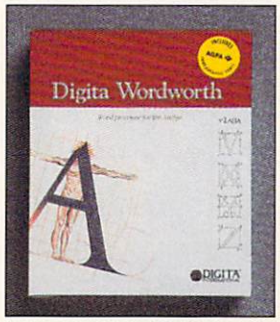
QuickWrite
$50, ***New Horizons***
QuickWrite 1.1 is a simple word processor that's ideal for folks with floppy-only A1200 systems. This stripped-down version of ProWrite doesn't support bitmapped fonts or images in documents, but it doesn't require a lot of memory or space either. It's very easy to learn, and is great for folks whose word-processing needs don't go much past the occasional letter to Mom. It supports Productivity mode (as well as SuperHires) for a high-resolution, flicker-free display on AGA machines.

SBase Personal 4
$149, ***Oxxi***
Personal is a cut-down version of SBase Pro, but not that much was left out. The data programming language is gone, as is support for macro keys. Everything else is pretty much the same, however, including support for 256-color data entry forms and reports on AGA machines.

SBase Professional 4
$299, ***Oxxi***
The new version, 1.3, is the only really full-featured, programmable database for the Amiga. It comes complete with its own database programming language, ARexx interface, built-in communications capability, and forms/report editor. The latest version lets you build custom data-entry forms with up to 256 colors on screen at once for AGA users.



TypeSmith
$199.95, ***Soft-Logik***
TypeSmith is a must-have for the Amiga typographer. Not only can you design your own fonts in PostScript, Amiga, and Compugraphic formats, but you can also convert from one format to another—a great way to bring all those public-domain PostScript fonts to your Amiga programs. It runs in all appropriate AGA screen modes, but unfortunately it does not read TrueType fonts, the most abundant in the PD arena.



Wordworth 2 AGA
£129.99, ***Digita International***
One of the most widely acclaimed word processors in Europe, Wordworth 2 AGA takes full advantage of AGA screen modes and supports Compugraphic fonts. Digita has no US distributor at the moment, but plans to work with one in '94.

Graphics, Animation, Video, and Music Software



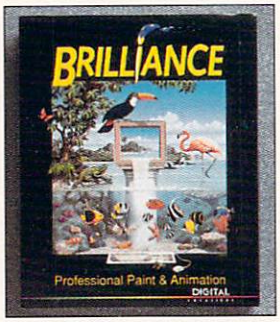
Aladdin 4D 3.0
$499, ***Adspec Programming***
Powerful 3-D modeling and rendering program that excels in creating 3-D gasses.

Anim Workshop 2.0
$159.95, ***Axiom Software***
Used with ASDG's ADPro, Anim Workshop lets you create and control your ANIM files.

Art Department Professional 2.3
$299, ***ASDG***
ADPro 2.3 is an indispensable image-processing and -manipulation program for all graphics from desktop publishing to video. It performs image merging, matrix filtering, rescaling, rotations, flips, negative, color, and brightness adjustments, and dozens of other operations with 24-bit quality. It loads, converts, and saves in almost any Amiga or non-Amiga image format from PCs to Sun workstations to PostScript. Formats not covered by the main program are supported through the Professional Conversion Pack ($90), which adds input and output capability for the TIFF, Targa, X Windows, Sun Raster, PICT, and Rendition formats of other ►

computer platforms. ADPro also accesses most 24-bit display devices.

ARexx compatibility greatly expands ADPro's capabilities, as do its many add-on modules. ProCONTROL ($90), for instance, is a point-and-click batch-processing front end that lets you easily set up custom processing and special-effects procedures without ARexx programming skills. Several drivers and interface kits ($200 to $499) allow access to popular scanners and film recorders from such companies as Sharp, Polaroid, and Hewlett-Packard.

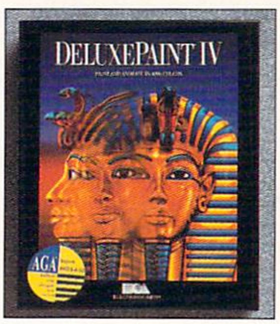


Brilliance
$250, ***Digital Creations***
Brilliance (with True Brilliance included) is a 2-D paint and animation program for all Amiga image formats from two-color to HAM8. It can load, paint, and save 16-million color images maintaining 24-bit accuracy. Brilliance includes such basic image-processing functions as negative, colorize, NOT, tint, brighten, and darken, and supports OptCode5 and OptCode8 animation formats. It has no ARexx support and a hardware dongle is included.

Caligari 24
$199, ***Octree Software***
Caligari 24 is a mature, user-friendly 3-D modeling, rendering, and animation program. Caligari offers organic deformation, hierarchical and keyframe animation, and a great interface. On AGA machines, output can be saved as HAM8 images to create nearly true-color animations, which can be played directly from RAM. Because the program runs outside the operating system, however, its design screens cannot be promoted and thus flicker.

Caligari Broadcast
$595, ***Octree Software***
A superset of Caligari 24, Broadcast's major distinctions are its ability to animate free-form deformations and its dongle.

Cocoon Morph
$99.95, ***DevWare***
Fast, easy-to-use morphing program that lets you load any IFF image (including AGA), and save frames in 24-bit, HAM, HAM8, or 16-level gray-scale formats.



DeluxeMusic 2.0
$129.95, ***Electronic Arts***
DeluxeMusic 2.0 is a modernized version of the old Amiga classic, Deluxe Music Construction Set. It is a music-notation and -playback system that lets you build music using either the Amiga's four resident voices or MIDI instruments. Not only does the program break the old chip-memory limitation, but it now operates in any resolution, including AGA modes.

DeluxePaint IV AGA
$199.95, ***Electronic Arts***
DeluxePaint IV provides 2-D painting and Opcode5 animations in a single program, utilizing all Amiga screen modes from two-color to HAM8. It loads and converts 24-bit images to the current screen format, but does not maintain 24-bit color data. Though DeluxePaint has no ARexx support, its screen image can be accessed from Art Department Professional, manipulated, and then sent back to the DeluxePaint screen buffer for further painting when both programs are running.

FractalPro
$199.95, ***MegageM***
FractalPro is a fractal-art and -animation program that offers ten base equations to render from, nearly infinite zooming, and a wealth of animation tools for professionally rendered chaos. While FractalPro's palette tools are rudimentary and it doesn't render in the Super72 800x600 resolution, it handles other 256-color and HAM8 modes admirably.

ImageFX
$429, ***GVP***
ImageFX is a do-everything image-processing program. It paints, it scans, it morphs, it converts, and it warps; with its complete ARexx implementation you could probably train it to do windows. Virtual memory support lets you use hard-drive space as RAM when RAM is scarce. ImageFX renders to any ECS or AGA screen mode, as well as most third-party graphics cards.

Imagemaster R/t
$299.95, ***Black Belt Systems***
Imagemaster R/t is a powerhouse image-processing system that works best with a fast processor, lots of memory, and AGA or a supported 24-bit display card. With a few hundred processing tools, a powerful painting module, and built-in 2-D morphing, there is little that Imagemaster can't do. Using the AGA chip set, Imagemaster displays in 256 colors or HAM8.

Imagine
$695, ***Impulse***
An incredibly powerful 3-D rendering program, Imagine is one of those programs with a steep learning curve that you'll be happy you climbed. You need an image-processing program to port Imagine 2.0's 24-bit output to AGA formats, but the new Imagine 3.0 supports AGA right out of the box, and adds such features as particle animation, kinematic-motion control, deformation, and a 3-D font editor.

Magic Lantern
$95, ***Terra Nova Development***
Magic Lantern plays 24-bit animations from a hard-disk or RAM. Supports several 24-bit boards; look for upcoming releases of new drivers for other boards in the near future.

MathVISION
$223, ***Seven Seas Software***
A fascinating program that creates dazzling screen displays from mathematical functions, MathVISION 2.4 was recently updated. It now offers full AGA support and extended color-cycling support for ECS Amigas.

Seven Seas' MathVISION Video Gold ($749) is a bundle containing MathVISION 2.4, an 800 number with 1.5 hours of training, e-mail support, an electronic newsletter, and a year of free upgrades.

MONTAGE 24
$399.95, **InnoVision Technology**
MONTAGE is the first dedicated titling package to take full advantage of the potential of expanded color resolution for video applications. It includes advanced features such as interactive resizing of text (using the mouse to stretch a title to a new size), smooth color spreads within text characters, embossing, and translucency. The first version was limited to the Video Toaster 4000, but MONTAGE 24 works with AGA machines, OpalVision, and GVP's IV24. (For further details, see the review on p. 10.)

MorphPlus
$295, ***ASDG***
This program performs morphing (changing one image into another over a series of frames), and other special effects such as perspective rotation, twirls and ripples, either on still images or an animated series of images. One of the premiere programs in the industry, MorphPlus is currently being used in a number of network television productions and Hollywood movies. Although professional users are likely to take the 24-bit images that the program produces to a single-frame recorder, AGA owners can create HAM8 animations of video quality that play back at speeds of up to 30 frames per second.

MultiFrame
$129.95, ***MacroSystemUS***
This graphics batch-processing program comes in two versions: one that works with ASDG's ADPro, and one for use with Black Belt's Imagemaster. The program will open on AGA screens; it can run multiple images through a single process and save them in another format, including HAM8.

PEGGER
$99.95, ***Heifner Communications***
PEGGER compresses those huge 24-bit IFF, Toaster Framestore, and HAM8 pictures into the compact JPEG graphics format, saving oodles of hard-drive space. You can use PEGGER to compress files in batches, or you can have it "snoop" loads and saves into various directories. The latter capability in effect adds JPEG support to programs (such as Brilliance) that don't have it.

Personal Paint
$98, ***Cloanto/Haitex Resources***
Personal Paint is a 2-D paint program with many image-processing functions, including matrix filters, and good color-reduction and dithering routines. It handles only register-based palettes of 2 to 256 colors (no HAM or 24-bit). It loads and saves in IFF, PCX, and GIF, plus its own Encrypted format with password protection, and C source-code format. Personal Paint supports retargettable graphics, and its keyboard equivalents and menu languages are user-configurable and easily customized.

Real3D
$699, ***Realsoft***
Real3D, a Finnish 3-D animation, modeling, and rendering program, can create incredibly life-like images through its depth-of-field, soft-shadow, and atmospheric effects. Dazzling animations are possible using features such as collision detection, behavioral animation, and motion blur. There's full AGA support for both editing and rendering, and its "zero wait-state design" allows you to continue modeling while your scene renders.

Scala MM210
$399, ***Scala Inc.***
The premiere point-and-click multimedia program, Scala makes it easy for you to combine pictures, sounds, music, and animation into an eye- and ear-catching presentation. This version was updated to allow it to load AGA pictures and animations—256-color or HAM8. The soon-to-be-released MM300 version should offer even more AGA and 3.0 features.

Scenery Animator 4.0
$99.95, ***Natural Graphics***
Scenery Animator is a 3-D landscape rendering and animation program, offering IFF, 24-bit, HAM and HAM8, 256 color, PCX, and DCTV formats. It draws fractal landscapes, plus real landscapes from Earth or other planets, using digital-elevation satellite map data. Scenery Animator allows random and individual user-placed 3-D fractal trees. You can position and animate GEO format (VideoScape) 3-D objects as well. Disks featuring additional landscapes are available.

VideoStage Pro
$179, ***Oxxi***
A video-titling system that takes advantage of AGA display modes and colors. Controls genlocks, supports Colorfonts, and offers full control of ANIM files. Videographers will appreciate its ability to detect "hot" colors for video.

Vista Pro 3.0
$99.95, ***Virtual Reality Labs***
VistaPro 3.0 is a landscape generator capable of creating complex, natural scenes of infinite variety. You control such details as the camera's field of view, snow lines and treelines, the placement ►



of lakes and rivers, and even roads and buildings in the scene. VistaPro supports AGA output, so you can create nearly true-color animations using the script language or optional MakePath software.

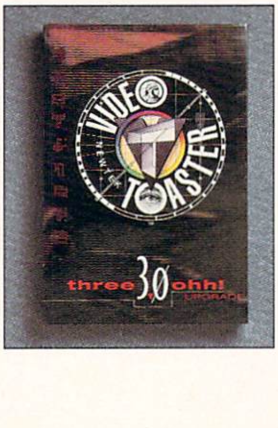


Video, Graphics, and Sound Hardware

ColorBurst
from $549, ***Migraph***
Colorburst is a high-color hand scanner. You can choose from a variety of resolutions ranging from 262,144 colors in 200 dots per inch (dpi) to 64 shades of gray in 400 dpi. An AGA display allows you to view images as they are scanned.

DCTV
$299, ***Digital Creations***
DCTV is a high-color expansion box that outputs television-style composite video. It allows any Amiga owner to animate screens with thousands of colors at speeds of up to 30 frames per second. Animations play back even faster on AGA machines because of improved graphics performance. The box connects between the Amiga and the monitor, however, and does not pass through hi-res AGA screen modes like DblNTSC correctly, so you'll probably want to unplug it when using those modes.

DSS16
$449, ***GVP***
This 16-bit audio digitizer/playback PCMCIA card lets you sample, mix, and play audio. Features a 48 KHz sampling rate for CD-quality sound, direct-to-disk recording mechanism, and the ability to edit samples larger than available memory. While the software does not take advantage of AGA modes, this is intentional because high-color displays would slow the sampler's performance.



Flipper
$399, ***GVP***
This 16-bit audio digitizer/playback unit is basically the same as the DSS16—but it connects to the DPP option port of GVP's A1230 Turbo+ Performance Series II card instead of to the A1200's PCMCIA port. This connection allows full DMA capability, enabling Flipper to perform better. However, it also excludes SCSI connection on the Series II card.

G-Lock
$499, ***GVP***
GVP brings a new level of versatility to the lowly genlock. This model accepts video in composite or Y/C (S-VHS) formats, and outputs in those formats as well as component (YUV). Another unique feature is a built-in audio mixer, which allows you to mix a second audio channel (music or computer sound effects) with your tape's audio track. A control-panel program lets you adjust all settings in software. Although G-Lock can display enhanced-color NTSC or PAL modes such as HAM8, it will not pass through modes such as Super72 and DblNTSC that are not compatible with television-style video—you'll have to unplug it to use those modes.

IV-24 A4000
GVP
A complete hardware/software video solution revamped to take advantage of the A4000, this version provides 24-bit display manipulation, video frame buffer/grabbing, genlock, switcher, and video output. Software includes a 3-D renderer (Caligari 24), 24-bit paint program (MacroPaint), image manipulator (Desktop Darkroom), video switching (myLAD), and several utilities.

Simpatica 2.0
£350, ***Optonica***
Single-frame rendering/animation controller lets you display AGA screens and render them to tape sequentially. The product supports RS422A video decks.

SuperGen SX
$749, ***Digital Creations***
Digital Creations has added S-VHS compatibility to its external SuperGen. While this new model retains all of the outstanding features of its predecessor (hardware dissolve controls, software controls, Key Out jack, etc.), it adds a unique new feature—a genlock disable for AGA machines. That means you don't have to unplug the unit to use the new high-scanning screen modes like DblNTSC with the SuperGenSX, as you do with almost every other genlock.

TBCPlus
$999, ***GVP***
This card operates a time-base corrector for broadcast-quality video processing. Although the hardware is not A4000 specific, the software does support AGA modes.

Video Toaster 4000
$2499, ***NewTek***
The latest version of this "broadcast studio in a box" uses the A4000's eight-bit HAM mode to add another layer of 262,000-color graphics. The result is a new set of effects that incorporate photo-realistic full-color pictures and animations, and the ability to create and play back high-color LightWave animations out of RAM at 30 frames per second, without an expensive single-frame recorder.

Vidi-12
$179, ***Rombo/Haitex Resources***
This video digitizer captures color images in less than a second and monochrome pictures in real time. It plugs into the parallel port, and supports display resolutions to 640x400 and screen modes including HAM-E.

Vidi Amiga Sound & Vision
$239, ***Rombo/Haitex Resources***
Combines the image-digitizing capabilities of Vidi-12 with digital audio sampling and effects in mono or stereo. Features composite or S-VHS inputs and a parallel-through port.

V-Lab
from $499.95, ***MacroSystemUS***
V-Lab is a hardware/software product for sequential and time-lapse grabbing of fields or frames from videotape or a video camera. The board uses a Zorro slot and does not interfere with genlock timing. Input is composite video, output is image files. It provides gray-scale picture-in-picture preview, basic color and balance processing of images, and saves in any Amiga format including HAM8 and 24-bit. V-Lab has extensive ARexx support, and does not require time-base correction of videotape input. The Y/C version adds S-VHS capabilities.



Expansion Hardware

A1200 Peripherals

2 to 3 IDE
$50, ***Elite MicroComputers***
Internal IDE connector allows you to keep your A1200's internal hard drive while still being able to access two external IDE drives.

A1208 SCSI/RAM+
$249, ***GVP***
Multifunction board plugs into the A1200's trap door and combines a high-speed SCSI controller, 8MB RAM expansion, and a math coprocessor.

A1230 Turbo+
$449, ***GVP***
Your Amiga 1200 may look like an A500, but with the GVP A1230 it will act more like an A4000! This easily-installed plug-in board combines a 40 MHz 68EC030 processor with 32-bit memory sockets and a socket for a math coprocessor.

A1230 Turbo+ Performance Series II
$749, ***GVP***
This updated release of the A1230 Turbo+ features a 50 MHz 68040, plus a battery-backed clock and DPP (DMA Peripheral Port). The DPP allows you to add an option such as GVP's A1291 SCSI controller or the company's Flipper 16-bit sound card. If the 50 MHz accelerator provides more power than you really need, stay tuned for the scaled-back version, which will offer all the Performance Series II options but with a 40 MHz 68030 processor and a lower price tag.

A1291 SCSI Kit
$99, ***GVP***
The SCSI interface that plugs into the DMA port of GVP's A1230 Turbo+ Performance Series II board.

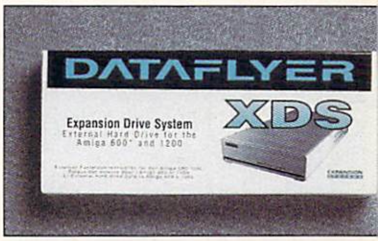
Back Pack
$135, ***Elite MicroComputers***
Allows you to add not just one but two expansion boards to the A1200's trap-door slot.

BaseBoard 1200c
$18.95, ***Expansion Systems***
This low-cost real-time, battery-backed clock/calendar plugs onto the clock header on the motherboard. It installs without requiring you to remove the main RF shield and allows re-installation of the clock shield.

BaseBoard 1208
from $159, ***Expansion Systems***
Combination expansion board for the A1200's trap-door slot offers FPU, clock, and up to 8MB RAM. The board accommodates the DataFlyer 1200s to provide control for SCSI devices.

Blizzard 1200/4
$299, ***Advanced Systems & Software***
Providing 4MB of factory-installed RAM and allowing for an additional 4MB ($199), the Blizzard board installs in the A1200's trap-door slot. Besides RAM, the board features a battery-backed clock.

DataFlyer 1200s
$99.95, ***Expansion Systems***
This SCSI host adapter connects to Expansion Systems' BaseBoard 1208 card and comes with Auto-Install software. It fits inside the A1200's case and ports out the back; external drive cases are available.



DataFlyer XDS
$99-$189, ***Expansion Systems***
External chassis for adding one 3.5-inch IDE or SCSI hard drive. Comes with all hardware (including cables) and software necessary for installation. Accommodates the XDS Second Chassis, which allows you to add yet another external drive.



DataFlyer 105SQ
from $799, ***Expansion Systems***
Compact external 105MB SyQuest removable- ►

cartridge drive in IDE format designed for the A1200.

DKB 1202
$149.95, ***DKB***
This plug-in board provides most of what Commodore left out of the Amiga 1200; up to eight megabytes of 32-bit fast RAM, a socket for a math co-processor, and a battery-backed clock/calendar. The 32-bit RAM not only makes the computer operate about twice as quickly, but also allows you to better take advantage of the computer's ability to create large screens with lots of colors.

I-Card
$299, ***Interworks***
An Ethernet networking card for your A1200's PCMCIA slot, the I-Card comes with a 16-bit Ethernet adapter and a SANA-II compatible driver.

MBX 1200z
from $149, ***Microbotics***
Microbotics' MBX 1200z fits in the trap-door expansion slot of your A1200 and adds a math co-processor (a 14 MHz 68881 is included; that's upgradable to a 50 MHz 68882), a SIMM socket for 32-bit fast RAM expansion (1, 2, 4, or 8MB), and a battery-backed real-time clock. Rendering projects will get a big speed-up from the math co-processor, and the 32-bit RAM will almost double the speed of your A1200.

M1230 XA
from $399, ***Microbotics***
The M1230 XA accelerator gives your A1200 near A4000-level performance. Models are available with 40 MHz 68EC030 or 50 MHz 68030 chips. There's also a 68882 math co-processor, a socket that accepts a single 32-bit RAM SIMM up to 128MB in size, and a battery-backed real-time clock. With this board in place, the A1200 benchmarks at 1.16 times the integer speed of an A4000, and 0.54 times the floating-point performance.

NakeD 1200
$98, ***Pre'spect Technics***
This interface card adds two slots that allow you to connect Zorro II (A2000-style) cards to your A1200.

PCMCIA Ethernet
$299, ***Amigo Business Computers***
This adapter allows local Ethernet peer-to-peer networking through the PCMCIA slot of the A1200. The unit works with Amigo's network software and with Ethernet cards from Commodore (the A2065) and ASDG.

PCMCIA Dual-Serial Adapter
$199, ***Amigo Business Computers***
Want to add an extra serial port to your A1200 to run a modem, credit-card reader, touch screen, or some other serial device? With this card—and the software that comes with it—you are able to drive such peripherals via the PCMCIA slot.

Power Box
$175, ***Elite MicroComputers***
This external hard-drive chassis accommodates two 5.25-inch drives. It comes with a boosted power supply, which replaces the one that comes standard with the A1200.

PSram
from $97, ***New Media***
New Media's PSram easily plugs into the PCMCIA slot on an A1200 and adds up to 4MB of auto-configuring RAM. Because it's dynamic 16-bit RAM, though, you don't get the speed increase associated with the 32-bit trap-door RAM on the A1200. In fact, it slows the A1200 by about 30%. This is a good solution for budget-minded A1200 owners or for those who need to quickly move the RAM expansion between multiple machines.

The Clock
$19.95, ***DKB***
Real-time battery-backed clock fits into the A1200's internal clock port, leaving the main expansion port free. Kickstart automatically recognizes the clock on boot-up.

12 A' Clock
$34.95, ***Microbotics***
Tired of your A1200 asking you for the time? Microbotics' 12 A' Clock adds a battery-backed real-time clock to your system. You'll have to open your machine's case to install it on the motherboard clock connector, but it leaves your trap-door slot open for further expansion. Once in place the clock is automatically recognized by Kickstart 3 when you boot your A1200.

Twelve Gauge
from $599, ***CSA***
If you want all the power options—an accelerated processor (33 or 50 MHz 68030), math co-processor, RAM expansion (up to 32MB), and a SCSI controller—on one trap-door board for your A1200, this is it. It's currently the only product that offers this set of upgrades. While its SCSI controller proved slower than that of GVP's SCSI/ RAM+ in our recent tests, CSA has been working on an improved version. As far as computational speed, Twelve Gauge is among the two fastest—along with MicroBotics' M1230XA.

A new option that should be available by the time you read this will add networking capabilities to the Twelve Gauge. CSA-Net, a factory upgrade, is designed to work with Interworks' ENLAN-DFS software.

Viper 1230
from $499, ***ICD***
Expansion board for the trap-door slot with 68030 accelerator, clock, and sockets for up to 32MB RAM and optional FPU.

Viper S2
$199, ***ICD***
SCSI-2 host adapter plugs into Viper 1230.

A4000 Peripherals

A4000-040/40MHz
GVP
This 40MHz 68040 accelerator for the A4000 features 32MB of RAM. You can add 96MB more memory with a RAM expansion module; a SCSI-2 fast DMA option is also available.

A4091
$549.95, ***DKB***
Commodore stopped producing its long-awaited fast SCSI-2 hard drive controller for the 4000, but DKB has picked the product up. Multi-megabyte per second transfer rates give the A4000 the muscle needed for real-time video playback from hard drive.

A4098
GVP
Zorro-III SCSI-2 fast controller card with up to 128MB of RAM using industry-standard 72-pin SIMMs.

A-Max
$499.95, ***ReadySoft***
Available as a stand-alone product or as an update for owners of the A-Max II Plus board, the A-Max IV Mac emulator adds color support, support for third-party graphics cards, and the ability to multitask Mac emulation with Amiga software. Requiring a Zorro slot, the board sports two AppleTalk- and MIDI-compatible serial ports, and can read both low- and high-density Mac disks with a high-density Amiga drive. The A4000 supports Mac 256-color displays directly.

DataFlyer 4000SX
$129, ***Expansion Systems***
SCSI 16-bit host adapter. Includes special software, including an auto-diskchange program for automatically recognizing disk swaps when using Bernoulli, SyQuest, and Floptical drives.

DataFlyer 105SQ
from $709.95, ***Expansion Systems***
Compact 105MB SyQuest removable-cartridge drive in both IDE and SCSI models, and in internal and external versions. Special ROM corrects the A4000's inability to automatically recognize disk changes. Lower-cost versions come without controller; A4000's embedded controller does not support the system, but those from ICD and Expansion Systems are known to work.

DKB 3128
$374.95, ***DKB***
The Toaster 4000's ability to play back AGA LightWave animations is limited by memory, and with 18 megabytes, you get only about six seconds' worth. DKB's new A4000 memory board allows you to add up to 128MB per board, extending playback time of LightWave animations to over half a minute. Unlike some boards, the 3128 lets you add one memory module at a time, and mix SIMM sizes.

Emplant
from $279.95, ***Utilities Unlimited***
Emplant is a color Macintosh emulator for Zorro-slot equipped Amigas. It takes advantage of AGA modes to provide emulation of 256-color Macintosh graphics modes in DblNTSC and Super72 modes; 24-bit is possible with third-party graphics cards. Mac software can be multitasked with Amiga programs. The board is available with optional SCSI and AppleTalk serial ports. Utilities Unlimited promises other emulations in the future, including IBM 386 and Sega Genesis modules.

Fastlane Z3
$599, ***Advanced Systems & Software***
This full-length Zorro III card combines a fast SCSI-2 DMA controller with memory expansion. The board holds 16 SIMM sockets that can accept up to 64MB of 32-bit RAM; an optional upgrade kit lets you add a full 256 megabytes.

X-Calibur
$1199, ***Micro R&D***
This RAM card, with four SIMM sockets for up to 128MB, fits under your A4000's 68040 processor chip, leaving your slots available for other types of expansion. With the RAM at that location, the '040 chip can address it faster than normal, which is why X-Calibur promises to nearly double your processing speed.

Coming Attractions:

In researching AGA compatibility, we learned of a few upcoming products you can look for to provide special AGA features.

Gold Disk's Professional Draw 4.0, scheduled for release in early '94, is one, and a PCMCIA version of the Emplant (Utilities Unlimited) emulator is in the works for the A1200. DKB is getting close to releasing an accelerator for the A1200 that will also provide a SCSI-2 drive controller.

On the software side, Optonica has promised an authoring system for creating CD32 titles. Another program, MultiLayer (on the way from MacroSystemUS), will provide digital image compositing to users of ADPro and Imagemaster. Look for more on these and other products in future issues. ■



Digital Drawing P

With their pressure-sensitive cordless pens, lightweight portable designs, and precise accuracy, the latest electronic digitizing tablets are no longer mere novelty items to today's artists, engineers, and general graphics enthusiasts.

While the Amiga has always been a great computer for graphics, one of the better tools for drawing and painting—the digitizing tablet—has not received serious attention from Amiga developers. While the old Anakin Easyl was interesting way back when, it seems primitive by the standards of today's tablets for the PC and Mac platforms. Lightweight frames, highly flexible pressure-sensitive pens, and cordless models make the older tablets seem like museum pieces.

Fortunately, many of these innovations have finally reached the Amiga market, and a growing variety of digitizing tablets are now available to Amiga users.

The Tablet Versus the Mouse

What advantages do tablets offer over mouse control? Although the mouse allows for fairly good precision and control, it feels very unnatural to traditional artists and others who have worked with pens, pencils, and brushes all their lives. The digitizing tablet can be used with a stylus that looks and feels like a pen, providing you with a much more natural transition to computer graphics.

Many people, however—including artists—can adapt to using a mouse without a great deal of trouble. Yet, there are other, more fundamental differences between tablet and mouse. The mouse is a "non-relative" device—that is, if you move your mouse to the right, say, then lift it up and place it back where you started, your screen cursor is going to stay at the same spot on the screen where you stopped your movement—even though the mouse is now back in its original position. Why this occurs has to do with the way the mouse interacts with the computer. The mouse uses a small ball as a traction device. The

By Paulo de Andrade

ower



ball activates two rollers, one that measures vertical rotation and the other horizontal rotation. As you move your mouse, the ball rotates and the sensors send the computer the rotation information, basically telling it how far the mouse has traveled in any direction. If you move your mouse to the left and down, for example, both sensors are activated and the pointer travels in the same direction on the screen.

A digitizing tablet, on the other hand, is a "relative" device in that every position on the tablet's surface has a fixed coordinate that is relative to a cursor position on the screen. When you place your stylus at a certain position on the pad, the screen pointer will be placed at exactly the same relative position. If you lift your stylus and place it across the tablet surface, your screen pointer will also be placed across the screen.

This fixed-coordinate system offers several advantages. Not only does it feel more natural for people who are used to working on paper, but it also gives the user more precision, as the stylus can be placed on a specific area. One benefit of this is that you can easily trace drawings by placing them on top of your digitizing tablet. As you move your stylus over the lines, a direct translation of the movements appears on screen. This can be useful not only for sketching and painting, but also for transferring technical drawings and blueprints for use with CAD and 3-D rendering programs.

Another advantage of digitizing tablets is that you never have to deal with awkward, jerky movements from mouse drag caused by rollers inside the mouse becoming dirty and starting to slip. With no moving parts to contend with, tablets always provide smooth, steady movement.

A Matter of Great Sensitivity

The feature, though, that really distinguishes tablets from other computer-graphics tools is the newly developed pressure-sensitive pen—a special stylus that can sense the pressure you apply to the tip as you draw or paint on the tablet's surface. Again, this is a more natural approximation of how one uses a pen or pencil, a brush, or any other artistic tool. But, perhaps more importantly, this pressure-sensitivity information can be used by a growing number of programs to make the results of electronic painting more accurate and realistic. For instance, Centaur's OpalPaint can use the pressure information from a tablet's stylus to control such parameters as amount of paint applied, amount of transparency, brush stroke width, and so on. Thus, as with traditional methods, if you press your stylus harder on the tablet's surface, more paint is applied and the brush stroke looks broader. If you apply less pressure, the stroke looks thinner and less paint is applied. The better pressure-sensitive tablets offer numerous sensitivity levels, ►

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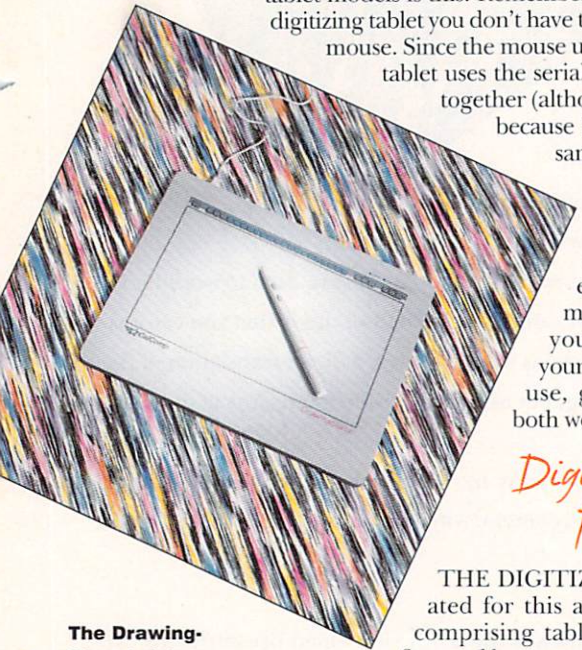


Both the cursor and pen are corded in the SummaSketch III/AProDraw 2.4 bundle.

so you can vary the pressure as you paint and the resulting brush stroke will look uneven—very much like using traditional methods. You end up with a much more realistic image, as opposed to one with lines of even intensity and width applied with a mouse. Currently, besides OpalPaint, there are several other Amiga programs I know of that can make use of pressure information from tablets, including GVP's ImageFX and Electronic Arts' DeluxePaint.

For the Amiga to be able to read the pressure information coming from digitizing tablets, special driver software is necessary. TriMedia offers excellent drivers, including those for the CalComp tablets it markets for the Amiga, as well as the driver software it licenses to Wacom for that company's line of Amiga tablets. Soon, however, Commodore's Workbench 3.0 release will read pressure information directly—not only saving the user from having to install special drivers, but also in all likelihood spurring more developers to make use of pressure-sensitivity capabilities in future releases of their software.

One final point to make before we look at specific tablet models is this: Remember, when you work with a digitizing tablet you don't have to give up the use of your mouse. Since the mouse uses a game port and the tablet uses the serial port, you can use both together (although not simultaneously because if you move both at the same time you end up with conflicting information). You may find this to be very useful, as some styluses lack the equivalent of the right mouse button. Besides, you can pick the tool of your choice for a particular use, giving you the best of both worlds.



The Drawing-Slate (with cordless pen) is a trim 6x8-inch model of portability

Digitizing Tablet Packages

THE DIGITIZING TABLETS evaluated for this article are all packages comprising tablets (with pens) manufactured by one company and driver software developed by another. In the case of the SummaSketch pads/AProDraw software, you must buy each component separately. The TriMedia offerings (DrawingSlate and DrawingBoard III) are CalComp tablets with TriMedia software, but both packages are distributed by TriMedia. The Wacom tablets (SD420E, UD0608R, and UD1212R) use TriMedia drivers, but you can purchase entire packages from Wacom or buy the software separately from TriMedia.

I chose four of the tablets to evaluate for the purpose of this article—but check the "Digitizing Tablets at a Glance" box for multiple offerings—in both model and size—from the different companies. *(To contact the developers of any package presented in this article, consult the "Manufacturers'/Distributors' Addresses" list on p. 92.)*

SUMMASKETCH III / APRODRAW 2.4

AProDraw, consisting of ***Summagraphics*** hardware and ***R&DL Productions*** software, is actually an updated version of a drawing tablet that has been around for some time. As such, it lacks two of the important new features found in the other, newer packages: The stylus is neither pressure sensitive nor cordless.

The pen is attached to the tablet by a flexible cord that while not restricting movements greatly, still does not provide the sense of freedom that a cordless pen does. The non-pressure-sensitive stylus tip acts exactly like an Amiga left mouse button—that is, like an on/off switch. Although you lose the pressure control, it still offers all the other advantages of a digitizing tablet as compared with a mouse. A second button on the pen's barrel acts like the right mouse button. The AProDraw package does come with a useful four-button cursor complete with cross-hair attachment, but the cursor does not feel as comfortable (it is smaller and square) as that of the TriMedia/CalComp packages.

The $599 version (plus $84.95 for software) offers a 12x12-inch active drawing area, using a total desk area of 16.2x16.4 inches. It also comes with a plastic cover for the active area, which is useful for tracing an image from a sheet of paper placed underneath the cover. AProDraw uses a single cable to connect the board to the computer serial port and the external power supply—the little black-box type you plug directly into the outlet. Fortunately, you do not have to unplug the power supply to turn it off, as there is an on/off switch at the back of the tablet.

The software is very easy to set up and runs directly from the original floppy—thus not requiring any special installation. The included manuals are excellent—even providing some tracing tips—and the tablet performs generally well. It is very accurate and great for tracing images. The pen tip requires some pressure to be activated, but once on, it gives you a very positive feel. The corded pen does feel a little heavier than the cordless models in the other packages, but overall this is a very nice, responsive tablet. If you do not care about pressure sensitivity, this is a quite serviceable package. (A larger 18x12-inch model retails for $999 plus driver software.)

THE DRAWINGSLATE

The **DrawingSlate,** which replaces the ***TriMedia*** DrawingPad we originally received for this review, is a lightweight CalComp tablet with a cordless, three-button pressure-sensitive pen and comes with the latest version of TriMedia's excellent AccuPoint driver software. Except for the slightly trimmed-down size (6x9x0.1875 inches) and new software, it is virtually the same in function as the DrawingPad.

The DrawingSlate is highly portable and ideal for laptop use. The first of the pen's three switches works like the Amiga's left mouse button, except that it also transmits pressure information. The other two switches are located on the side of the pen. The one closest to the tip works like the right mouse button, while the other one

works exactly like the left mouse button in that it does not register pressure information for those occasions when you don't want to use that feature in your drawing.

Power for the DrawingSlate comes from a separate power supply, the little black-box type used in AProDraw. While this approach keeps the pad small, it can become somewhat inconvenient if you use a power strip to run your computer and peripherals, as its physical size occupies more than one outlet. Another disadvantage is that you have to unplug the power supply to turn it off. The DrawingSlate is connected to the Amiga by a long serial cable, which comes in handy if your computer sits far away from your tablet. The cable also provides an elegant solution to the power system, as the serial connector that goes into the Amiga's serial port also has a plug for the external power supply. That way, the only cable connected to the tablet is a very thin and flexible one, allowing for complete freedom of movement. It would be nice, however, if there was a connector between this cable and the tablet, instead of it being fixed. With heavy use, any problem that develops with the cable will make replacement of the cable more difficult.

The active drawing area comes with a clear plastic cover so that you can firmly place any drawings you want to trace underneath. The included software consists of the drivers and a patch disk for DeluxePaint AGA. While the DrawingSlate provides a high enough resolution (1270 lines per inch) to allow for very precise drawings, it has a much smaller drawing area than the larger tablets, which forces you to scale down all your movements—although this is something that most people can get used to quite easily.

All in all, the DrawingSlate is fast, flexible, and reasonably priced at $449. Except for the fact that tracing images is limited by the tablet's small size, this is an excellent tool.

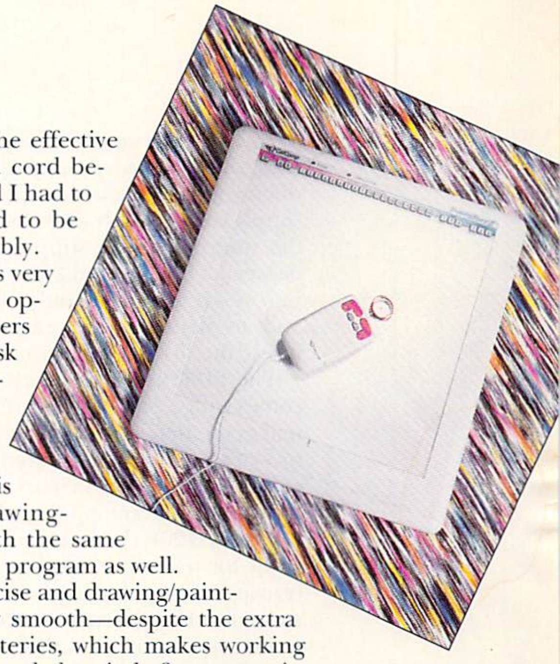
The DrawingBoard III

Another Calcomp tablet/TriMedia software package, the **DrawingBoard III** is available from ***TriMedia*** in 12x12-inch ($699) and 18x12-inch ($1199) models—both with cordless, pressure-sensitive pens. (A corded, nonpressure pen version of the 12x12 tablet goes for $549.)

Both the 12x12 (reviewed for this article) and the 18x12 models offer resolutions of 2540 lines per inch for very precise drawing operations. Although not as portable as the DrawingSlate, this relatively lightweight tablet offers a larger active drawing area, allowing you to trace over larger drawings and also to exercise more control. The active area also comes with a plastic cover, letting you place standard 8.5x11-inch paper underneath. The overall size of the tablet is a very economical 14.6x15.9 inches.

The Drawing Board comes with a cordless, four-button, battery-activated pressure-sensitive pen and also with a corded cursor. The cursor is like a mouse, except it does not have moving parts and works in relative mode. Its cross-hair attachment lets you trace very precise drawings. While the pen is better for painting, the cursor is great for CAD and 3-D modeling work, letting you transfer blueprints directly to the computer.

While the DrawingBoard III does have an on/off switch at the back of the tablet, it still uses the same kind of external power supply employed by the DrawingSlate. Because the power supply connects directly to the tablet, the effective length of the supplied cord becomes a lot shorter, and I had to use an extension cord to be able to run it comfortably.



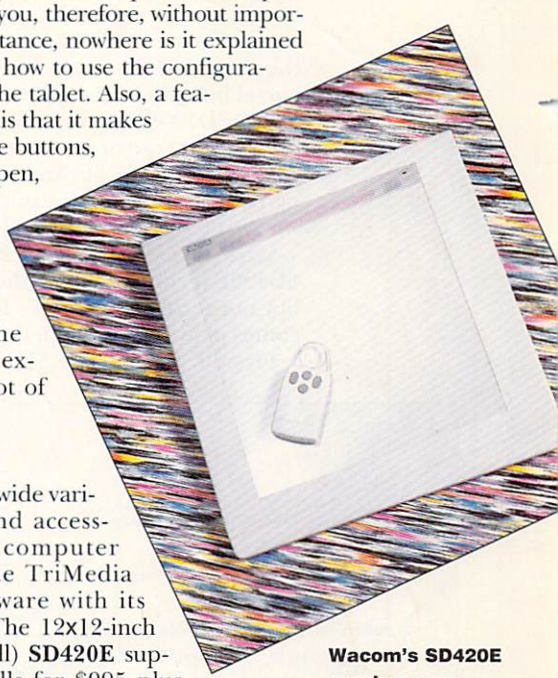
The DrawingBoard III's four-button cursor offers precision accuracy—and it's comfortable to use.

Software installation is very easy, and you have the option of running the drivers either from your hard-disk drive or from the original floppy installation disk. The DrawingBoard uses the same Accupoint software that is supplied with the DrawingSlate, and it comes with the same DeluxePaint AGA patch program as well.

The tablet is very precise and drawing/painting operations are very smooth—despite the extra weight of the pen's batteries, which makes working with the pen over an extended period of use more tiring than with a battery-less pen like the Wacom (see below). I do, however, love the precision of the cursor, which slides freely and feels more comfortable than AProDraw's—this is a case where you can really feel the difference that better material makes. Tracing precision with the DrawingBoard is excellent, making transferring drawings to the computer a snap.

A few caveats about the DrawingBoard III: TriMedia does not include the original CalComp manual as part of the package—leaving you, therefore, without important information. For instance, nowhere is it explained in the TriMedia manual how to use the configuration/macro functions of the tablet. Also, a feature unique to this tablet is that it makes a clicking sound when the buttons, including the tip of the pen, are pressed. This did become a bit annoying to me, but, then again, some people might actually wind up liking it.

Overall, however, the DrawingBoard III is an excellent product and a lot of fun to use.



Wacom's SD420E sports a completely cordless cursor and pen—sans batteries.

Wacom SD420E

Wacom—which makes a wide variety of tablets, pens, and accessories for different computer platforms—bundles the TriMedia Accupoint driver software with its tablets for the Amiga. The 12x12-inch (16.5x16.5 inches overall) **SD420E** supplied for this review sells for $995 plus $100 for the software. (Two new Wacom tablets, also available for the Amiga, were released recently—see the information at the end of this section.)

Overall, the SD420E seems to be the best built of all the tablets tested, showing that a lot of attention was paid to details large and small. There are several dip switches at the back that allow you to set the tablet's configuration—and even a reset button that lets you reconfigure the tablet for use on other platforms if you wish. This is also the only tablet I tested that uses an ►

internal power supply. The power cord plugs into the back and uses only a single power outlet space. Also, when you turn the tablet's power switch off, the power supply is completely shut down. Another advantage of the internal power supply is that it lets you select between 110 volts and 220 volts—a big plus for use in Europe. It is also the only tablet protected by a fuse, and, to make life even easier, a spare fuse is located inside the fuse holder for easy, fast replacement.

The SD420E is also the only tablet reviewed that comes with a battery-less pressure-sensitive pen. This makes the pen better balanced, lighter, and less tiring to work with over extended use. Another very nice touch is the supplied portable pen holder, again a unique feature among the tablets under review.

The SD420E does not come standard with a plastic cover for the active drawing area. Other models with transparent overlays and—a unique feature—electrostatically charged surfaces to hold paper in place for tracing are available at slightly higher costs. If you use the standard tablet, you must either tape the paper with the material to be traced to the tablet or use your own plastic cover.

As for the pen, my initial complaint was that it has only one button, located at the tip and acting as the Amiga left mouse button. You can assign the right button to any keyboard key and then activate it with your other hand, or you can use the mouse itself. This one-button setup, however, finally proved to be easier after I got used to it. Surprisingly, the lack of a second button on the pen seems more like a blessing than a curse. The pen feels very natural this way, and using the keyboard felt more comfortable than using the barrel buttons on the other tablets' pens.

The SD420E also does not come standard with a cursor—but you can order an optional four-button *wireless* cursor for about $150. Another option is what the company calls the "soft" pressure-sensitive pen for those who want a softer feel in their painting or drawing.

With a resolution of 1270 lines per inch, the SD420E is comparable to the TriMedia DrawingSlate but not to that company's DrawingBoard III, which comes in at 2540 lines per inch.

Overall, I found the SD420E to be of sturdy construction, responsive, and—with its lightweight, battery-less pen—the most comfortable to work with over periods of prolonged use.

As mentioned above, two additional Wacom tablets are now available to Amiga users. The **UD1212R**, which I did receive in time for some hands-on use, is another 12x12-inch tablet. This is a less expensive ($749 plus $100 for software) and more lightweight model than the SD420E, but it lacks the dual voltage selector, built-in power supply, and pen holder that are standard with that tablet. It does, however, come with a two-button pen and a transparent overlay for tracing, and offers an optional cordless cursor. It also has a menu strip across the top, like the Calcomp models, that allows you to preset some configurations. Its "Ultra Pen"—cordless and battery-less—offers more pressure levels (120) and a programmable switch button on the side of the barrel. Resolution of the UD1212 is 1270 lines per inch.

Although I did not get an opportunity to use it, Wacom also now offers the **UD0608R** (also called the **ArtZ Serial Tablet**), which is a lightweight, portable tablet with a 6x8-inch active drawing area, for $499 plus $100 for software. It employs the same "Ultra Pen" used with the UD1212. Resolution is 1016 lines per inch.

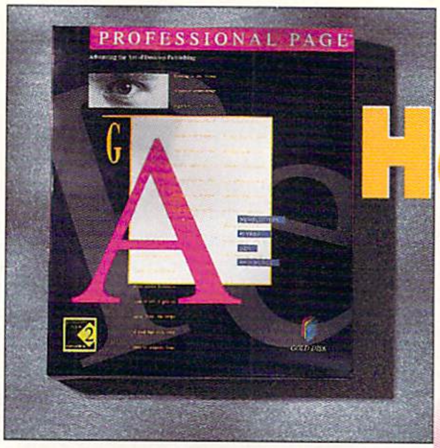
Today's responsive, flexible, lightweight digitizing tablets for the Amiga represent major advances in electronic drawing-board technology. You can see this most clearly in the TriMedia and Wacom models—with their cordless, pressure-sensitive pens—as compared with the older-style Summagraphics/AProDraw tablet. While the Wacom tablets offer a few more features (including battery-less pens) than the TriMedia models, the latter are generally less expensive and the DrawingBoard III offers unmatched 2540-lpi resolution. Tablets from both companies are of excellent quality and either can provide you with highly useful tools for drawing and painting needs. ■

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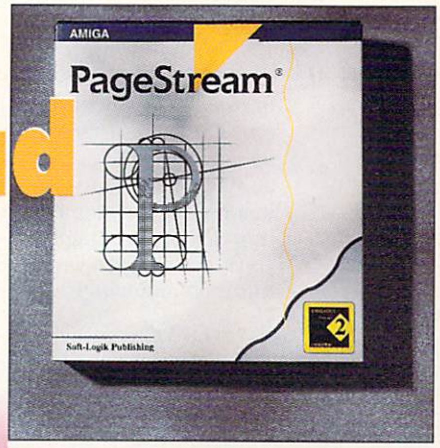
Digitizing Tablets at a Glance

MODEL	COMPANY	SIZE	PRICE	DRIVER	PEN: Pressure Sensitive?	PEN: Cordless?
SummaSketch III	Summagraphics	12x12	$599	$84.95[1]	No	No
		18x12	$999	$84.95[1]	No	No
DrawingSlate	TriMedia	6x9	$449	included	Yes	Yes
DrawingBoard III	TriMedia	12x12	$699[2]	included	Yes	Yes
		18x12	$1199	included	Yes	Yes
SD420E	Wacom	12x12	$995	$100[3]	Yes	Yes[4]
ArtZ (UD0608R)	Wacom	6x8	$499	$100[3]	Yes	Yes[4]
UD1212R	Wacom	12x12	$749	$100[3]	Yes	Yes[4]

NOTES:
[1] AProDraw 2.4 driver software is supplied separately by R&DL Productions. Complete package is often referred to as "AProDraw."
[2] Less expensive version with ordinary, corded stylus instead of pressure-sensitive pen is available for $549.
[3] Wacom's Amiga Interface Kit is TriMedia's AccuPoint driver software and is also available from TriMedia.
[4] Wacom's pressure-sensitive pen is not only cordless but also battery-less.



Head 2 Head



Comparative Evaluations
of Popular Amiga Programs

DESKTOP PUBLISHING

Pro Page vs. PageStream

By Denny Atkin

ALTHOUGH THE AMIGA'S professional claim to fame is desktop video, it was an innovator in the desktop-publishing arena long before anyone ever used the machine to make toast. Features such as process color separation, which just this year became standard on PageMaker for the PC and the Mac, have been available on the Amiga for years. And even though those platforms have been playing catch-up at a cheetah's pace, the Amiga can still run with the pack for the vast majority of desktop-publishing tasks.

At the forefront of Amiga publishing are Gold Disk's Professional Page and Soft-Logik's PageStream. Both are mature programs that have grown many new features and shredded most of their quirks and bugs over the years. For this "Head2Head" comparison, we'll concentrate on the unique characteristics of each program so that you can see which one best fits your needs; in-depth reviews of both progams could easily fill half of this magazine.

Solid Gold

THE FIRST HIGH-END desktop-publishing program for the Amiga, Professional Page provided pioneering support for process color separation and 24-bit graphics—making it the program of choice for serious desktop publishers in the late 1980s. If you've seen the now-defunct *.info* or *AmigoTimes* magazines, you know what excellent results can be achieved with this program.

The latest release of Pro Page, version 4.1, is enhanced with support for AGA graphics. You can now work in any screen mode supported by your Amiga—including the 800x600 Super72 mode—in 2, 16, or 256 colors; if you have an A1200 or A4000 and you're looking for a close approximation of your color document on the screen, Pro Page delivers. It also supports the Moniterm and A2024 monitors—the 1024x800 resolutions offered by these monochrome monitors is fantastic for full-page layout work.

The interface has attractive 3-D buttons that are more what you'd expect to see on a program running under Microsoft Windows than on an Amiga. Still, the program works fairly intuitively. The on-screen page is surrounded by a paste-board area where you can drag text or pictures for temporary storage while rearranging a page or moving articles to another page. The page, paste board, and tool box take up the entire screen and are fixed in position.

Creating documents in Pro Page involves starting a new document and then placing boxes on the page to contain the various text and graphic elements of your publication. Text columns, bitmapped graphics, structured drawings, and titles all occupy individual boxes—you can't just click on the page and start typing. You can ►

Editor's Note: *This is the second installment of a new AW feature that will appear on a semi-regular basis. "Head2Head" will present the latest versions of leading products in a particular category—comparing strengths and weaknesses and contrasting differences to help you evaluate which serves your needs best. Let us know which products you would like to see covered by writing to "Head2Head,"* ***AmigaWorld*** *Editorial, 80 Elm St., Peterborough, NH 03458*

work on only one Pro Page document at a time—opening a new document clears the previous one from memory. This is unfortunate, since it prevents you from easily cutting and pasting data from one publication to another. You can use a "function genie" (more on these in a moment) to append an old document to your current document, drag the desired elements to the pages you're working on, and then delete the extra pages, but this is an annoyingly complicated procedure.

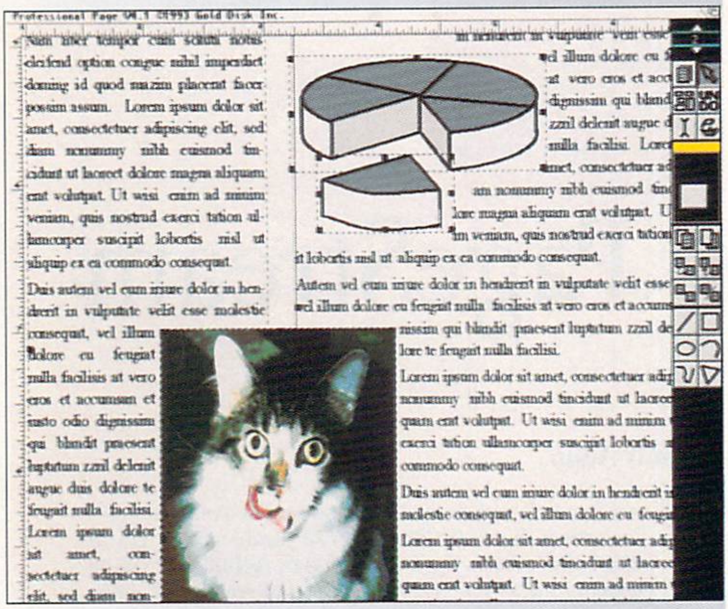
Bottle It!

One of Pro Page's nicest features is its suite of ARexx macros, which Gold Disk calls genies. Dozens of genies are included, adding functions such as automatic drop caps, shadow effects, mail merge, Avery label support, and links with ASDG's Art Department Professional. If you can program in ARexx, then you can create your own genies to automate layout procedures.

Pro Page's style tags let you define style, font, size, and other characteristics for certain types of text, such as headlines and body copy. Template pages let you lay down elements common to left and right pages—such as page numbers and running footers or logos—once and have them automatically appear throughout your document. You can also create pages using supplied genies that simplify the design of brochures, newsletters, and other common documents.

Pro Page includes direct links to its included Article Editor (a speedy word-processor based on TransWrite that's useful for making changes to body text) and Graphics Editor (an embarrassingly limited paint program that handles only 16-color hi-res or 32-color lo-res; you'll want to use it only if you don't own any other paint software). Just select a box with text or graphics in it and send its contents to the appropriate editor. Most useful is the link to Gold Disk's Professional Draw, which makes touching up structured drawings a simple process. (Basic structured-drawing tools are built into Pro Page and may satisfy many users' needs.) A function genie lets you import a range of data from the company's Professional Calc spreadsheet and format it as a table.

If you use lots of bitmapped graphics in your documents, you'll appreciate Pro Page's ability to simply include a pointer to the graphic in your document instead of the entire file—this can make the difference between 50K and 500K Pro Page documents. Unlike PageStream 2.22, Pro Page displays bitmapped graphics in full color on the screen.



Unlike PageStream 2.22 Pro Page 4.1 provides support for AGA graphics, as well as the ability to display bitmapped graphics in full color on the screen.

Professional Page 4.1

Gold Disk

$295

Not copy protected.

Minimum system: 2MB RAM, two floppy drives; genie functions require ARexx 1.15 or higher.

Recommended system: 4+MB RAM, hard drive, 68020 or greater processor, AGA machine.

Output Options / Import Capabilities

Pro Page will output to Preferences printers or PostScript printers and typesetters. The program uses Compugraphic outline fonts to create smooth, jaggy-free output on anything from a nine-pin dot-matrix to a 600-dpi (dots per inch) laser printer. When printing to a Preferences printer, Pro Page images the entire page as a huge graphic and prints that in graphics mode, ignoring your printer's internal fonts. Although the results are excellent, this can make for slow printing.

PostScript output options should satisfy the most demanding pros—Pro Page supports process and mechanical color separation, as well as Color PostScript. Control of Undercolor Removal (UCR) and Gray Component Replacement (GCR) will help you achieve the best four-color output. The full set of Pantone colors is provided for exact color matching. Other output options include Encapsulated PostScript (EPS), mirrored (for transparency work or emulsion-down printing), negative, and roll paper.

The latest version of Pro Page finally updates its graphics- and text-import filters—you can bring in text in ProWrite (New Horizons), WordPerfect 4.1 (Amiga and PC versions), excellence! and Scribble! (Micro-Systems Software), KindWords (The Disc Co.), TextCraft (CBM), WordWorth (Digita Int'l), and TransWrite formats. Graphics formats include Aegis Draw, Art Expression (Soft-Logik), BMP, EPS, GIF,

IFF, PCX, Pro Draw, and TIFF. The program supports only bitmapped and Compugraphic fonts for Preferences printer output, but a utility is included that will convert PostScript fonts to Compugraphic format.

Pro Page is packed with more features than I can possibly go into here; among its other neat features are a graphic page-sorting window, automatic tiling of pages up to 48x48 inches, a print-spooler utility, and the ability to annotate your pages with non-printing yellow sticky-notes.

It's Only "Logikal"

PAGESTREAM 2.22 APPROACHES Amiga publishing from a different angle. Upon booting the program you'll notice that it closely follows the Amiga user-interface style guidelines. Your page and the surrounding work area appear in a standard depth-arrangable window; you can open multiple publications and easily move elements from one document to another.

Layout is freeform in PageStream, with no need for boxes on the page. Just import a graphic and drag it into place on the page, or click on the Text gadget and start typing a headline. Text Columns (similar to Pro Page's boxes) are available for precision placement of formatted text; you'll want to use these for anything longer than a headline or caption. A particularly handy option will display which columns are linked with each other.

Like Pro Page, PageStream prints documents using your printer's graphics mode, unless you're outputting to a PostScript or HPGL (Hewlett-Packard Graphics Language) device. Unlike Pro Page, though, PageStream uses custom printer drivers. This isn't really a problem, as dozens of printers are supported, and you can output to a Preferences driver in a pinch. PageStream allows you to create incredibly large pages—by tiling your output and pasting the pages together, you can create signs up to 1200x1200 feet in size.

Fonts Galore

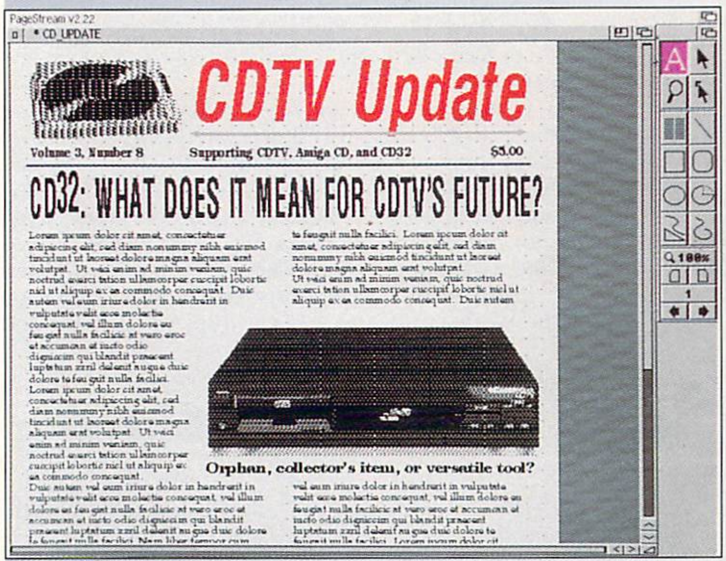
PageStream offers incredible flexibility in choosing fonts—it directly supports fonts in the original custom PageStream outline format, as well as PostScript Type 1 and Compugraphic outline fonts. Its Font Manager allows you to separate fonts into multiple directories; you can, for instance, have fancy display typefaces appear in your font list only when you actually need them. PageStream offers more text styles than any other Amiga program, including outlined, reversed, shadowed, and double-underlined text.

Often-used formats can be stored in style sheets, each of which can contain up to 255 style tags. PageStream 2.22 doesn't support ARexx, but it does let you record sequences of keypresses and assign them to function keys. This capability can be used as a simple macro language, but you're very limited in what you can do, and editing the obscure codes used to create these macros is anything but an intuitive process.

PageStream 2.22 doesn't have table-import features like Pro Page, but it does have more flexible tab stops for use in formatting data—Pro Page lets you set tabs only at a fixed distance from each other (for instance, every eighth column), whereas PageStream allows you to set up to 20 tab stops at any position.

Connecting "Links"

While Pro Page allows custom links to other Gold Disk programs, the HotLinks connection supported by PageStream is an open standard that any Amiga developer can support. Soft-Logik sells a package called HotLinks Editions ($150) that includes the HotLinks drivers (needed to enable PageStream's HotLinks capabilities), the PageLiner text editor, and the BME bitmapped graphics editor. HotLinks is more than just a channel for data exchange. Applications publish or ►



PageStream 2.22 offers an intuitive approach to page layout and a large array of fonts for maximum flexibility in design options.

PageStream 2.22
Soft-Logik
$299.95

Not copy protected.
Minimum system: 1MB RAM, two floppy drives.
Recommended system: 2MB RAM, hard drive.

subscribe to data files; you don't have to simultaneously run the various programs that are using a data file. If you modify a bitmap in BME, it will be changed the next time you load the PageStream document containing that bitmap. ProWrite and Black Belt's Imagemaster are HotLinks-capable, and both are great adjuncts to PageStream. Unfortunately, Soft-Logik's Art Expression structured-drawing program doesn't support HotLinks yet.

PageStream is very versatile in the file-import department. It accepts text in ASCII, excellence!, Final Copy (SoftWood), IFF text, ProWrite, and WordPerfect formats, as well as a number of Atari ST formats. Graphics formats supported include Art Expression, DR2D, Aegis Draw, GIF, EPS, IFF, IMG, MacPaint, PCX, Pro Draw, TIFF, and others. Soft-Logik updates these filters often and adds new ones, posting them free of charge to bulletin boards and on-line networks.

Updates are an area where Soft-Logik has shown the lead. While Gold Disk has rarely offered free updates for Pro Page (except after disastrous releases such as the buggy 4.0), Soft-Logik has offered numerous free updates for PageStream over the years. Along with new import modules, new capabilities such as HotLinks support were added free via on-line updates.

PageStream 2.22 supports 256 colors when run on the Workbench screen, but it displays only text and structured graphics in color—bitmapped graphics are shown as muddy black outlines. AGA users will have to wait for the next version to get full-color graphics.

Desktop Decisions

WHICH IS RIGHT for you? Both PageStream and Professional Page are excellent programs. Each excels at different aspects of the publishing process, and your personal publishing needs will dictate which is better.

Score points for Pro Page for its support of AGA screen modes, full-color display of bitmapped graphics, ARexx macros (genies), and process color separation. While PageStream does not match up in those categories, it shines in its intuitive user interface and flexible approach to layout, its support for a wide variety of fonts and text styles, its utilization of the HotLinks open standard, and Soft-Logik's vigorous support for free and frequent updates.

As you have seen, each program has its own particular strengths and weaknesses, but you as the user have an awful lot of DTP capability from which to choose. ■

Denny Atkin, a well-known Amiga journalist, got his start with ***AmigaWorld*** *back in 1987. He has also worked for* ***COMPUTE!****, and recently wrote a book entitled* ***Denny Atkin's Best Amiga Tips and Secrets****.*

Did The Fat Lady Sing?

Because many of the better Amiga programs are continually updated, it's always difficult to say, "okay, no more, bolt the door, that's the final score," when it comes to comparing software. And such is the case here with our Pro Page-PageStream face-off. No sooner did we complete it, than Soft-Logik announced that PageStream 3.0 will ship in the very near future. While a move like this may appear to muddy the waters, we think this kind of competition is beneficial—with the winners being all Amiga users. No doubt, Gold Disk will respond with a Pro Page upgrade. For now, here is a report on PageStream 3.0 based on a beta version of the program. —Eds.

IN THE CURRENT desktop-publishing battle, PageStream and Pro Page might appear to be at a virtual stalemate—each program holding the advantage in certain territories. Soft-Logik hopes to change the balance of power with PageStream 3.0 ($395).

Soft-Logik's promotional literature for PageStream 3.0 doesn't target Pro Page, but rather Quark XPress 3.2 and Aldus PageMaker 5, the industry-standard publishing programs on the Macintosh and PC, respectively. After working for a few weeks with an early beta version of the program, I do think that PageStream is ready to take on the big guys.

PageStream 3.0 addresses all the major complaints with version 2.22: It now has ARexx macro capability (you can write scripts, or record them as you create a page and then modify the recorded macros); it will show bitmapped graphics in full color; and it now supports AGA screen modes.

Soft-Logik didn't stop there, though. Version 3.0 has a completely revamped user interface that's a model example of following the Amiga style guide; functions are intuitively organized in menus and requesters.

In addition, PageStream 3.0 not only lets you open multiple documents, but also multiple views on the same document. Now you can, for instance, show a 33-percent size full-page view for reference while working on a 200-percent blown-up section.

Publishing long documents is no longer a nightmare on the Amiga thanks to PageStream 3.0's support for breaking your publications into chapters and subchapters. The features that made PageMaker so popular with book publishers, such as automatic indexing and table-of-contents generation, as well as automatic "continued on/from" generation, are all here.

The new PageStream adds a full suite of professional typography features: smart quotes and dashes, automatic ligatures, widow and orphan control, user-definable kerning and tracking tables, and discretionary hyphens, among others. If you do decide to use PageStream to create a billboard, Soft-Logik claims that 3.0 will support font sizes up to 50,000 points.

There are many other improvements, too: Updated versions of HotLinks, PageLiner, and BME are bundled with the program; the text- and graphics-import filters now also support export; and numeric tabs and tab fills (dot leaders) have been added. I've spent a lot of time working with PageMaker and Quark on the PC and Mac, and I can't think of a single feature that I've used on those programs that's not in PageStream 3.0.

If PageStream 3.0 sounds attractive, but you've been a Professional Page user until now, don't despair, Soft-Logik says that PageStram 3.0 will load Pro Page documents, so you won't lose access to your current library of documents. □ *—DA*



Linking Up with AmigaGuide

Work a little "Wonderland" magic into your applications with a little-known Workbench feature called AmigaGuide. It lets you create hypermedia links that give instant access to pop-up help screens, documentation, and other reference material—including picture and sound files.

WHILE IT MAY be unintentional, nevertheless there is a well-kept secret on Workbench 3.0 that can open up some interesting doors into many applications programs. And, no, you don't have to swallow any strange pills or mutter weird incantations to gain access to it. The name of this marvelous little tool is AmigaGuide—so let's find out what it does, where it's located, and how to use it.

It's no surprise that many Amiga owners aren't even aware that AmigaGuide exists. It is mentioned only once in the Workbench 3.0 manual, and then only in passing. A program specifically called "AmigaGuide" isn't even included on the 3.0 system disks. Yet, AmigaGuide has been available in various versions for more than three years, and it is now an integral part of the 3.0 operating system. ►

By Mark R. Brown

ILLUSTRATED BY ROBERT BURGER

So exactly what is it? AmigaGuide is nothing less than the official, Commodore-developed, absolutely free hypertext system for the Amiga (see the sidebar "What is Hypertext" for more on hypertext and hypermedia). Using AmigaGuide, software publishers can give applications help screens that pop up at the press of a button. Shareware and PD developers can create stand-alone help systems and hypertext electronic "books" without programming. And end users can easily create their own hypertext journals, cross-referenced note files, and even family trees. AmigaGuide is, in short, one of the more useful real-world tools that Commodore has ever released.

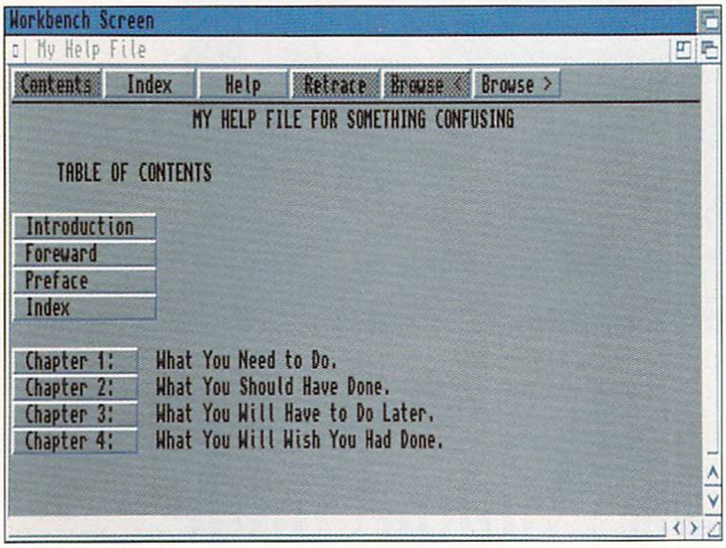
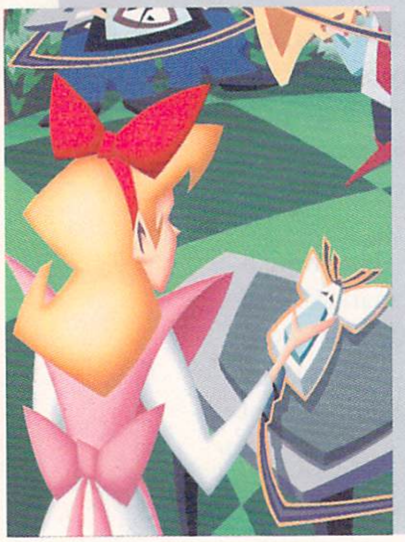


Figure 1. Displaying an AmigaGuide file via a viewer program reveals a string of buttons across the top of the screen that can be used to navigate through the file.

What is Hypertext?

THE TERM "HYPERTEXT" was coined by computer pioneer Ted Nelson (the author of the first personal computer book, *Computer Lib/Dream Machines*) in 1965, long before computers could actually handle such a thing. The term refers to documents that contain text fields having "links" to other text fields, perhaps even in other documents. For example, if you ran across a term you weren't familiar with in a text file, and that file was linked to another file of definitions, you could simply click on the word and its definition would pop up on the screen. Theoretically, you could continue clicking on words and popping up new text files for hours before returning eventually to your original document or, perhaps, going off on some permanent tangent—such are the dangers of hypertext. The term has expanded to include "hypermedia"—in which links can also be made to graphics and sound files.



—MRB

AmigaGuide is being discovered by more and more software authors who are including AmigaGuide format help and documentation files along with their software releases. As just one example, the most recent version (3.4) of the popular freely distributable communications program Term includes documentation in AmigaGuide format. It uses the keyboard Help key to bring up context-sensitive help as the program runs.

Viewing AmigaGuide Files

In the Utilities drawer of the Workbench 3.0 disk you'll find a wonderful little program called MultiView that can be used to display text files and IFF images. It can even play digitized sounds. In fact, MultiView is able to handle any file type for which it finds a datatype definition in the "DEVS:DATATYPES" drawer of the Workbench.

An AmigaGuide datatype is included on the Workbench distribution disk, along with an amigaguide.library file in the LIBS: directory. Both are required in order for MultiView—or any other Amiga program that understands datatypes—to display AmigaGuide files. (The MultiView program is documented on page 4-10 of Commodore's Workbench 3.0 User's Guide.)

A stand-alone AmigaGuide file viewer—called, amazingly enough, "AmigaGuide"—does exist. Commodore, however, chose not to ship it with Workbench. There was really little need to do so since MultiView does exactly the same job—and more. Both programs act almost identically when displaying AmigaGuide files.

A version of AmigaGuide for OS versions before 3.0 is available on Fred Fish Disk #920 as part of a freely distributable archive sent out by Commodore. Also included in the archive is a full set of documentation outlining how to create your own AmigaGuide files, along with utilities and examples. Even if you already have OS 3.0, I strongly recommend you get a copy of this archive if you are serious about writing your own AmigaGuide files.

If you were to display the sample AmigaGuide file presented in Listing 1 using AmigaGuide or MultiView, it would appear as in Figure 1. The viewer program displays a string of buttons across the top of the screen that are used for navigating through the file. If a Table of Contents and Index are defined, clicking on the first two buttons will jump you right to those parts of the document. The Help button displays an AmigaGuide-format help file explaining how to use the display program. Retrace takes you back where you came from, a screen at a time. (This button is very important in a hypertext display program because you can easily get confused jumping from place to place in a document.) Finally, the Browse> (forward) and Browse< (backward) buttons let you browse linearly through an AmigaGuide file a screen at a time.

A Sample AmigaGuide File

AmigaGuide files are called "databases" and are usually named "#?.guide." They are simply ASCII text files that contain text to display alongside commands that tell AmigaGuide what to do. AmigaGuide commands, which always start with an "at" sign (@), can

instruct AmigaGuide to display a word or phrase in a button, link to an ARexx hook in a running application, launch an application or ARexx program, display or play a datatype-defined file, or execute an AmigaDOS command. Listing 1 shows a short sample AmigaGuide file in its entirety.

The first line—@DATABASE "MyHelpFile.guide"—is required in every AmigaGuide file. This line identifies the file as an AmigaGuide database file when it is read by any of a variety of AmigaGuide viewer programs.

The second through fifth lines are references and notes. Line two assigns a version number to the file that can be displayed from the DOS Shell using the AmigaDOS Version command. Lines three and four declare copyright and author information. Line five is a remark. All of these lines use an interesting feature of AmigaGuide: Any line beginning with @ that does not contain a valid command is interpreted as a nonprinting comment line. A side effect of this is that misspelled commands are treated as comments.

The commands in lines six and seven, respectively, define a font for the file to use and turn on wordwrap, which breaks up lines automatically so you don't have to add carriage returns to make your displays look attractive. This latter feature is new with the 3.0 version of AmigaGuide, and it will be followed, we hear, by even more formatting options in a future version.

Line eight—@INDEX MYINDEX—is the first "link" defined in this particular file. This line tells the viewer program to jump to the node in this file called MYINDEX whenever the Index button is pressed. You could also define a Table of Contents node using the @TOC 'xxxx' command, but if you don't (as we didn't), it defaults to MAIN.

Line nine—@NODE MAIN "My Help File"—is the first line in the file to define a "node." A node is a chunk of text that is treated as a single hypertext block. Each text node begins with the @NODE 'xxxx' command, where 'xxxx' is a unique node name, and ends with the @ENDNODE command. Every AmigaGuide file must contain a node called MAIN.

Line ten—@NEXT FOREWARD—tells the AmigaGuide viewer program which node to jump to if the user presses the Browse> button. This command should be placed right after the @NODE 'xxxx' command. You can also use an @PREV 'yyyy' command to instruct the viewer program where to go if the Browse< button is pressed. If neither of these is specifically defined, the AmigaGuide displayer will assume that the Browse buttons should jump to the nodes that physically precede or follow the current node.

The next two lines contain no @ commands, so they are simply printed to the screen. Any block of text that does not contain an @ command is displayed—with ►

Listing 1. A Sample AmigaGuide File

```
@DATABASE "MyHelpFile.guide"
@$VER: MyHelpFile.guide 1.1 (10/25/93)
@(C) "Copyright © 1994 AmigaWorld Magazine"
@AUTHOR "Mark R. Brown"
@REM Remember to check this file one more time!
@FONT topaz.font 8
@WORDWRAP

@INDEX MYINDEX
@NODE MAIN "My Help File"
@NEXT FOREWARD
            MY HELP FILE FOR SOMETHING CONFUSING

    TABLE OF CONTENTS

@{" Introduction  " link INTRO }
@{" Foreward      " link FOREWARD }
@{" Preface       " link PREFACE }
@{" Index         " link MYINDEX }

@{" Chapter 1:    " link CHAP1}  What You Need to Do.
@{" Chapter 2:    " link CHAP2}  What You Should Have Done.
@{" Chapter 3:    " link CHAP3}  What You Will Have to Do
Later.

@ENDNODE

@NODE INTRO "Introduction"
  INTRODUCTION

  Hello there! Welcome to "My Help File"! I hope you've taken
the time to read the @{" Preface " link PREFACE}, since it's
some of the best writing I've done in years...
@ENDNODE

@NODE FOREWARD
  This is the foreward.
  Foreward stuff goes here.
@ENDNODE

@NODE PREFACE
  This is the preface.
  Preface stuff goes here.
@ENDNODE

@NODE CHAP1
  This is Chapter 1.
  What You Need To Do.
@ENDNODE

@NODE CHAP2
  This is Chapter 2.
  What You Should Have Done.
@ENDNODE

@NODE CHAP3
  This is Chapter 3.
  What You Will Have To Do Later.
@ENDNODE

@NODE MYINDEX
  This is the Index.
  The Index goes here.
@ENDNODE
```



wordwrap if that feature is activated. If there is more text in a block than can be displayed at once, the horizontal and vertical scroll bars at the edges of the display window are used to scroll the displayed text.

The next line—@{" Introduction " link INTRO }—is the first in our sample file that actually creates an on-screen button. In this case, that button contains the text enclosed in quotes ("Introduction "). When the user clicks on this button, the Link command tells the displayer to jump to the node labeled INTRO. Scanning down the listing shows us that this is the first node following the main node. When the button is pressed, the screen will clear and the AmigaGuide viewer will display the text in the INTRO node. Note that each node begins with a @NODE 'xxxx' definition command and ends with a @ENDNODE command.

The other buttons work in a similar manner. They can be defined in a neat, columnar format, as they are on our MAIN page, or they can be included in-line. A sample of an in-line button occurs in the INTRO node of our sample file (see Figure 2).

Further Links and Other Advanced Features

Buttons can be used to jump to more than just text contained in the same file. By referencing file names, they also can link to other AmigaGuide database files, display text files and IFF picture files, or even play sounds. In fact, buttons can link to any file type that is defined in a DEVS:DATATYPE file.

For example, if we had a picture called "mypicture.iff" in the same directory as our sample AmigaGuide file, and we wanted a button to display it, we might define it like this:

@{" ShowPicture " link mypicture.iff/MAIN }

We define the button just as we did before, but use a



AmigaGuide Resources

THERE ARE A number of freely distributable programs and help files to assist you in the creation of your own AmigaGuide hypertext files. Here are some you might find helpful:

TITLE	FISH?	AMINET?	DESCRIPTION
Viewers			
ADoc	875	Y	Help utility with an ARexx port.
Hyper	786	Y	Another file viewer with an ARexx port.
Man	CDROM#1	Y	UNIX-style "man" manual reader command.
MinGuide		Y	Small and simple AmigaGuide viewing program.
Most145		Y	Viewer that supports XPK, pipes, and locale.
PrintGuide		Y	Prints AmigaGuide files to a PrefsPrinter.
Converters			
Text2Guide	931	Y	Converts ASCII text files to AmigaGuide format.
ADtoHT	853	Y	Converts AutoDoc files to AmigaGuide format.
MKGuide	787	Y	Converts TexInfo files to AmigaGuide format.
IV2AG		Y	Converts GNU InfoView to AmigaGuide format.
Developer's Tools			
BadLinks	893		Utility to test links in AmigaGuide docs.
AmigaGuide	920	Y	Archive of AmigaGuide direct from Commodore.
AutoDocIt		Y	AmigaGuide/AutoDoc/C header file doc utility.
AGOberon		Y	Oberon language interface to amigaguide.library
Sample Guides			
Amiga-FAQ	CDROM#1	Y	Frequently asked questions about the Amiga.
Guide2Inet	CDROM#1	Y	Big Dummy's AmigaGuide to Internet.
CheatGuide		Y	Amiga game cheats.
ERefDocGuide		Y	Reference for Amiga E language compiler.
DPaintHelp		Y	Help file for DeluxePaint IV.
EMacsGuide		Y	Supporting docs for the EMacs editor.
HowToCode7		Y	The Demo Coder's Manual.
IRCGui		Y	Help file of all IRC-Commands.

Note: AmiNet files are available on Internet AmiNet file sites, usually in the directory "text/hyper." Actual filenames may vary. □

—MRB

filename instead of a node name. If our picture had been located elsewhere, we would have had to include the full pathname.

For the serious AmigaGuide developer, a host of advanced features makes AmigaGuide even more useful. You can create XRef cross-reference files that make nonbutton words act as though they were buttons. An ARexx interface makes it possible to link context-sensitive AmigaGuide help files into applications programs. An ability called "Dynamic Nodes" lets AmigaGuide files link interactively to host programs that create linked files "on the fly." With help from the documentation files included in Commodore's freely distributable AmigaGuide archive, ARexx programmers can even link the amigaguide.library and use its functions directly.

Even if you haven't yet had occasion to use AmigaGuide, chances are you will soon. Many of you simply may be reading AmigaGuide-format documentation using AmigaGuide or MultiView. Some of you, though, may want to develop your own AmigaGuide databases. If you are among the latter group, you'll find some useful freely distributable tools and sample AmigaGuide database files listed in the "AmigaGuide Resources" sidebar. One thing is certain, however: You're going to be seeing and using AmigaGuide—in one form or another—a lot more in the months to come. ■

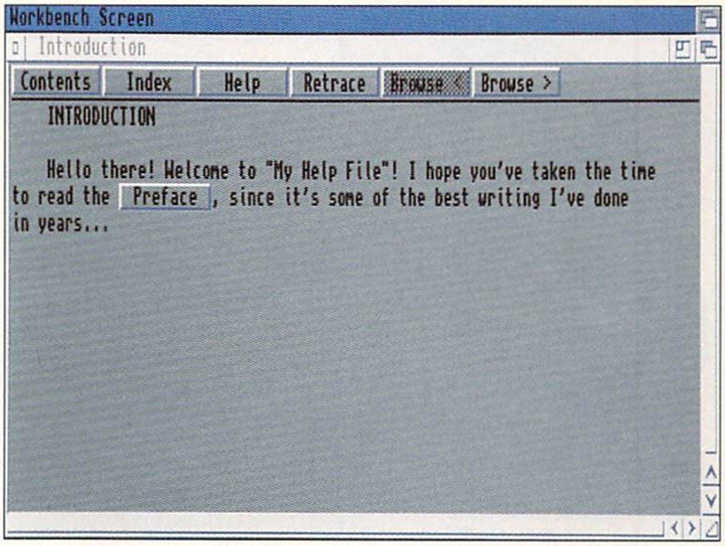


Figure 2. The INTRO node in the article's sample AmigaGuide file is an example of defining an "in-line" button.

*Mark R. Brown has been writing about the Amiga since it was only a rumor called "Lorraine." Formerly, he was the managing editor of the late great **.info** magazine. Write to him c/o **AmigaWorld**, 80 Elm St., Peterborough, NH 03458.*

ACCENT ON GRAPHICS

#60

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

Do-It-Yourself Clip Art

IN LAST MONTH'S column we looked at the differences between bitmapped and structured clip art and tried some techniques for making creative use of existing clips. This month we'll explore creating your own structured clip art (all from legally accessible sources) using the autotrace method.

Creating structured clips on the Amiga requires a good illustration program such as Professional Draw (Gold Disk) or Art Expression (Soft-Logik). While drawings can be created from scratch in these programs, many designers turn to the scanner or digitizer to begin the process of making a structured clip. I use an Epson scanner directly from Art Department Professional (ASDG), Imagemaster (Black Belt), or ImageFX (GVP). While it is possible to build colored clips by digitizing and tracing, the simplest plan is to work with line art and scan in the monochrome or line-art mode. To convert photographic images to line art, scan in grayscale and then experiment with contrast, brightness, and dither adjustments before converting the image to two colors. For the accompanying illustration, I scanned my signature at resolution 200 using AD-Pro's Epson Loader and saved it as a two-color IFF image. My goal was to have the signature as a structured clip that I could add to any DTP document.

Put a Trace on It

Some illustration programs, such as Pro Draw, allow a bitmap to be loaded as a template that can be manually traced. I chose to use an automatic tracer to produce a structured version of the signature. Art Expression, the companion illustration program to Soft-Logik's PageStream, comes with an additional program called BME, the Bit Map Editor, which can be used to touch up scanned or painted images. Of particular interest is BME's Trace function; this feature analyzes a bitmap and outlines edges with control points, lines, and curves. The result is saved as a structured DR2D format drawing.

When the Trace function is invoked, a number of adjustments can be made. For example, increasing the value of the Sample Rate causes fewer points to be used by the auto tracer. Decreasing the Curve Fit value creates longer and smoother curves. In tracing the signature, I used a Sample Rate of 10 and a Curve Fit of 6. Pro Draw also includes a good autotracer with similar functions (for more on this see Accent #43, Sep. '92, p. 44).

The illustration shows the signature loaded into Art Expression for cleanup. BME's autotracer is good, but any autotrace can be improved upon in a drawing program. The illustration shows the signature displayed as an Outline view with the Edit Points tool selected. This makes visible the square control points and circular curve adjustment handles. Many points in this drawing are superfluous and can be deleted or replaced with a line adjusted to the proper contour. Details added to the illustration in red clarify this.

For instance, number 1 points to a curved section that traced fairly efficiently. By contrast, number 2 shows a section with many points that could be deleted and replaced with the single curved line shown in red. Number 3 shows a magnification of an area in which irregularities in the bitmap were traced producing unwanted line segments. These can be deleted. The fewer points in a structured drawing, the faster it can be redrawn in the DTP environment, and the less program overhead it requires. Complex autotraced art can sometimes require considerable manual touch-up. Finished drawings can be saved in PostScript, DR2D, and ILBM formats.

Graphics and Ethics

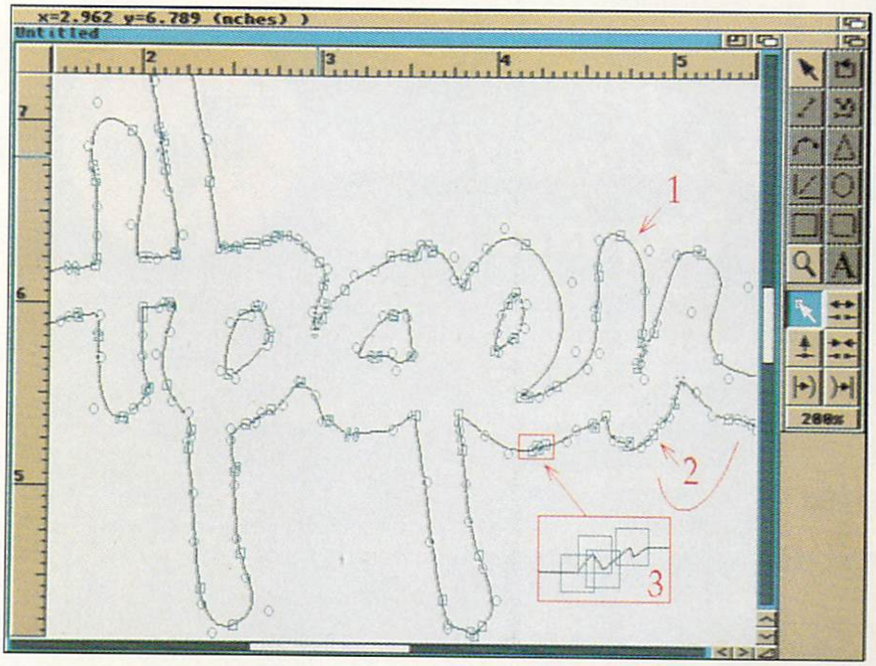
The legality of what can be scanned and used in this manner is somewhat murky. Image technology is moving

Using a technique called autotracing, you can compile your own archive of quality, structured clip art with minimal investment.

faster than copyright law can keep pace. The spirit of the law is that it is unfair to copy and use someone else's creation as your own. If you use your head and just leave it at that simple concept, you should never run into legal complications. Problems arise when designers begin believing that they have altered someone else's work by such and such a percent and are thus not abusing copyright. I have heard earnest discussions about this intriguing threshold of distortion beyond which lies safety from the law. With five percent of the world's population and roughly thirty-five percent of the world's lawyers, US society sometimes seems to be shifting away from a perception of laws as protections toward a perception that laws are limits to what we can get away with. In matters such as copyright, it would seem simplest to look inward to fundamental concepts of ethics.

Most work more than 75 years old is out of copyright and in the public domain. This accounts for the profusion of early engravings used today as clip art. Dover Books publishes volumes of scanner-ready clip art from this period. You can also visit used and antiquarian booksellers to buy illustrated books and magazines published before 1918. These contain a wealth of artwork. Often, you may find it useful to photocopy this artwork, enlarging it and cleaning it up with white-out before scanning. This is a useful technique in a public library. Look also for old maps, cards, and catalogues. Old certificates have ornate borders that can be used by filling the interior of the scanned image with a block of white.

NASA is a great source of legal photographic images. Public money supports space research, and NASA releases most of its images into the public domain in return. You can also make use of many photo services to purchase the right to use certain images. The Bettman Archive in New York manages more than 25 million images—including the UPI and BBC Hulton picture libraries. The per-print fee depends on the use of the photo. For information on its services, phone 212/777-6200. The Life Picture Service has 12 million images shot for *Life Magazine* from 1934 to the present. Phone 212/522-4800 for information. Check your local newspaper to see if it offers a photo service—most do.



A scanned signature has been autotraced and is being cleaned up in Art Expression as a structured drawing. Areas labeled in red are discussed in the article.

The Image Bank® is one of many photographic stock houses that also rent images. You can contact them at 212/529-3080. Better known in the computer community are CD-ROM collections of photographs and on-line archives of legal images that can be downloaded. You can also shoot your own photos for use with this scan-and-trace technique. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.

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"...this is the best 24-bit paint program...magnificent."
— Amazing Computing

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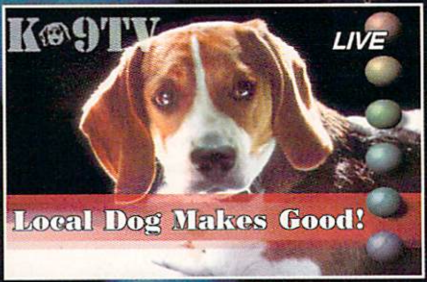
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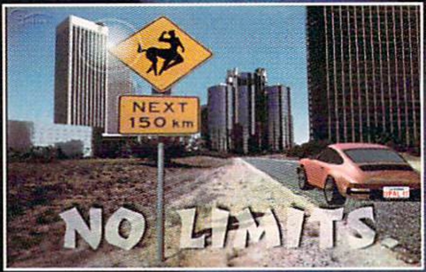
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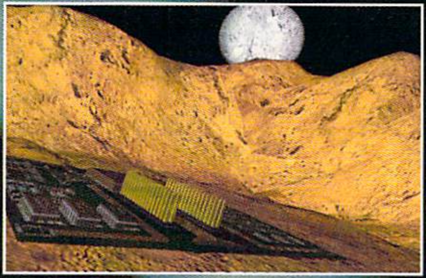
OpalPaint includes exclusive real-world artist tools, texture mapping, color and transparency gradients, multiple work modes, nozzle brushes and much, much more!

OPALPAINT

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OPALANIMMATE

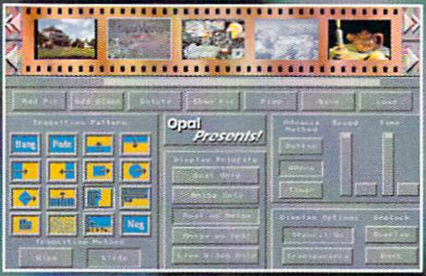
OpalAnimMATE creates delta-compressed animations from any series of images or framestores and plays them back using the OpalVision hardware in real-time at rates of up to 60 frames per second. It works in 8, 12, 15, 18 and 24-bit modes and features selectable screen sizes from 32 x 20 to 768 x 286 pixels. Excellent for use with 3-D rendering programs, landscape generators and other animation programs.



OpalAnimMATE plays animations at rates of up to 60 frames per second. It works in 8, 12, 15, 18 and 24-Bit modes and features selectable screen sizes from 32 x 20 to 768 x 286 pixels.

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Every Main Board includes Opal Presents!, an icon-driven presentation program offering complete display control of OpalVision images, Amiga graphics and live video.

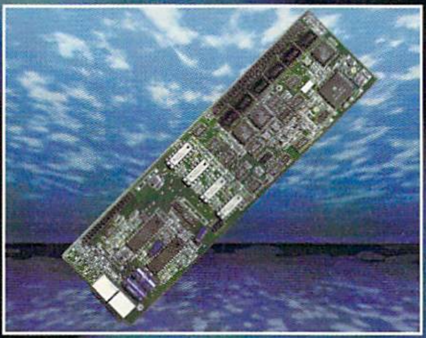
OPALVISION HOTKEY

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OpalVision Video Processor

OPALVISION VIDEO SUITE

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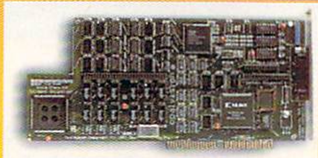
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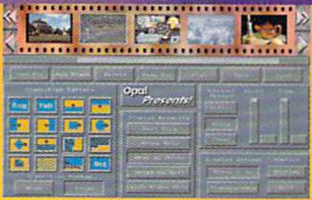
OPALVISION MAIN BOARD

The core unit of the modular OpalVision system. A true RGB, 24-bit frame buffer, it operates in any Amiga with a video slot. It allows smooth fading of pictures, color-cycling effects, and smooth, double buffered 24-bit animation. Includes connectors to the Video Processor and Scan-Rate Converter/TBC (optional modules). Includes a wealth of software.



OPALPAINT SOFTWARE

Consistently rated the best image processing software on the Amiga, OpalPaint allows you to easily create your own images or enhance and modify existing framestores. In addition to image processing, it has powerful painting and drawing capabilities. A full range of tools, real-time, full 24-bit.



OPAL PRESENTS!

Every main board includes Opal Presents!, an icon-driven presentation program offering complete display control of OpalVision images, Amiga graphics and live video. Create sales presentations, clip libraries of your work, educational videos or whatever you can imagine!



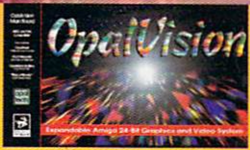
OPALPAINT SOFTWARE

includes an expandable library of image processing modes, texture mapping, color and transparency gradients, multiple work modes, nozzle brushes and many other tools



OpalAnimMATE

plays animations at rates of up to 60 frames per second. It works in 8, 12, 15, 18 and 24-bit modes and features selectable screen sizes from 32 x 20 x 768 x 286 pixels.



COMPATIBLE PRODUCTS

Because OpalVision has gained such acceptance around the world (it is both NTSC and PAL compatible), there is a huge selection of compatible hardware and software products from third party developers. A partial list is included below left.

OPALVISION COMPATIBLE

- Aladdin 4D
- AmiLink Video Editing Products
- Art Department Professional
- Caligari 24
- CineMorph
- Image F/X
- Imagine 3D
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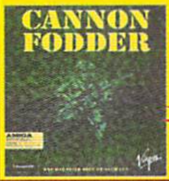
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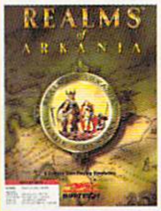


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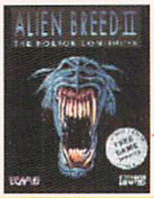
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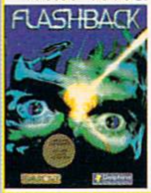
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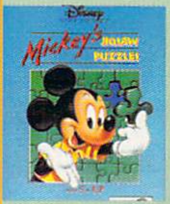
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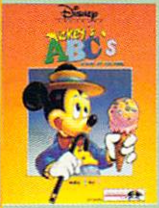
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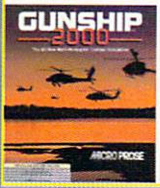


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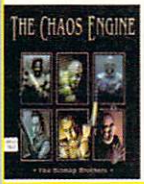


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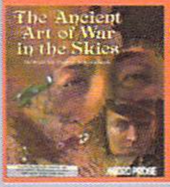


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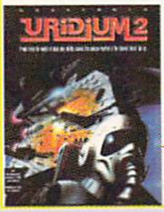


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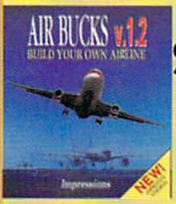
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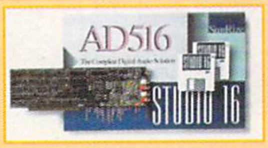
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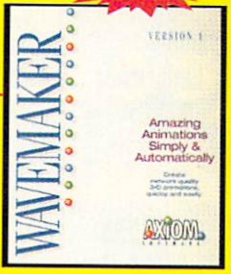
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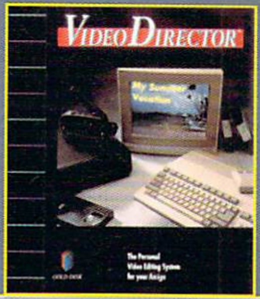
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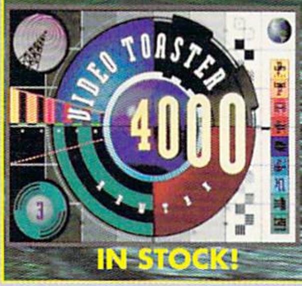
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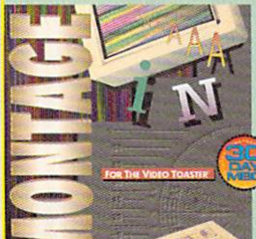


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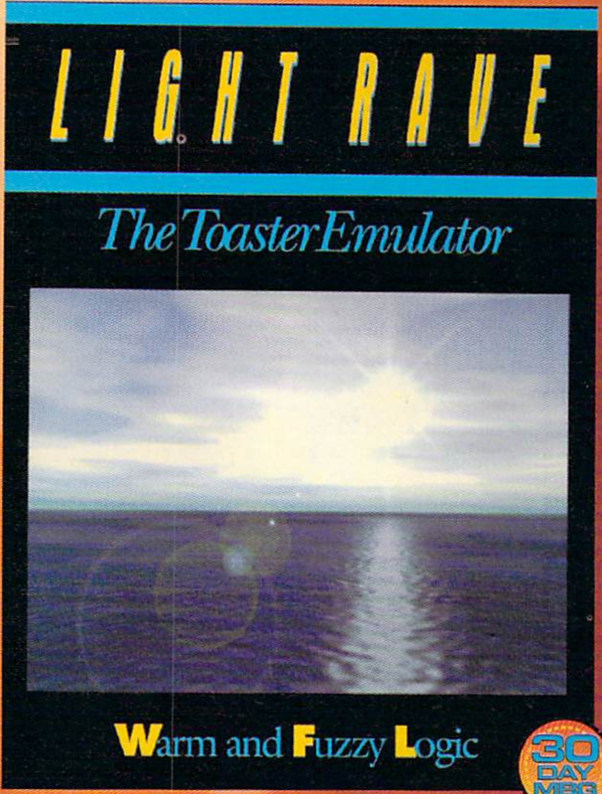


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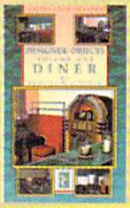
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The Demo Reel

A good demo reel can make the difference between getting work and not getting work.

By Geoffrey Williams

TO ATTRACT PAYING clients to your video business, you need a way to promote your abilities. The best way to do this promotion is via a demo reel that shows off your work. As a producer, I've looked at a lot of reels, and I know that most do not represent the artists or their work very well. With a little knowledge, though, you can turn your demo reel into a powerful sales tool.

You'll need only a few basics besides whatever software you use to create your graphics or animation. If you don't already do titling, make sure you have a professional-quality character generator with antialiasing capabilities, such as Montage or Broadcast Titler 2 (both by InnoVision Technologies), or that of the Video Toaster. Any animation you do must play smoothly at full speed. Because low-resolution animation is no longer acceptable, something like DCTV (Digital Creations) or an AGA-model Amiga is a must to get full color playback. And if your system is not fast enough, you'll need to buy DPS's Personal Animation Recorder or single-frame record your animations (usually at an outside facility unless you can afford the equipment). You should also have some way to sequence your presentation. There are several sequencing programs available for the Video Toaster, such as ToasterVision (Byrd's Eye Software), or you can use a multimedia program such as Commodore's AmigaVision or Scala's MM300.

The First Step

Before you decide what to include in the demo reel, think about who is going to see it and what type of services they might require. If you want to specialize in a specific area, say the fast-growing area of 3-D animation for the courtroom, then include only examples having to do with the subject—in this case, accident or crime reenactments. If you want to target a more general market, you will need a wider variety of examples. In this case you could create a nice title for each section (sections might include 2-D animation, 3-D animation, graphic stills, digital retouching, compositing, rotoscoping, and morphing) and show the best examples you can.

As to length, make your video not a second longer than you need to show the potential client what you can do. If it takes ten minutes to show off your range, fine, but if you can do it in under five minutes that's better.

Most of us put off creating a demo reel because our older work is not as good as the newer, and we don't have enough of the new stuff yet. True, your latest work may be your best, and you may have put the most time into it, but most clients won't be able to afford your most complex, time-consuming work. That's why it is important to have a wide range of styles—including your lower cost and your most dazzling (and most expensive) work. Some of your simpler work may be exactly what the client wants and can afford.

This is not to say that you should dump everything you've ever done to tape. The most common problem I've seen is the failure of the artist to realize that a demo reel is an advertisement, not an art gallery. No one cares that you've drawn a lot of pictures or created a lot of animations. They want to see the range of what you can do, with as much variety as possible. You must be selective, and make each example represent something unique.

You don't need to show every chrome 3-D flying logo you have done. If you have several unique and different flying logos, go ahead and show them, but resist the temptation to use similar ones just to show off how many clients you've had. You are better off having a client list scroll up the screen in the most impressive way you can devise. In fact, a client list is a good idea anyway; it establishes that you have been working, and allows you to mention clients whose productions are not appropriate for your reel.

Each image or animation should highlight something specific about your abilities, and you should make it clear what that something is. If a potential client has no idea how an image was created and what it represents, it is absolutely useless. If it is not obvious how the image was created, add a title or an explanation across the bottom of the screen, or use a voice-over description.

Attention Please!

Do everything you can think of to hold the viewer's attention. Make your

Continued on p. 70.

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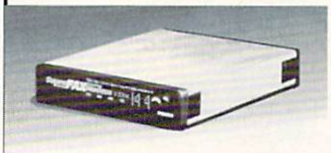
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From p. 66.
titles attractive and keep their style consistent and visually appealing. Use interesting and well-chosen transitions (but don't get carried away with too many!). Finally, keep the pace fast moving.

If you are showing a sequence of still images, don't keep them on screen longer than two to three seconds. That gives the viewer plenty of time to evaluate the image; longer displays become annoying, no matter how pretty the image is. Remember: The tape can always be rewound for a second look. Along the same lines, don't repeat animation sequences. Once is enough, no matter how short the sequence. If you want to include pieces longer than a minute, put them at the end of the tape with a special title noting the length (so viewers know what to expect). Long sequences early in the tape slow the whole presentation.

One of the best demo reels I've seen is from a company called Flying Logos. The voice-over consists of a Flying Logos representative and a client discussing a project. The client keeps naming different types of logo effects, and as the rep responds that "yes, we can do that," we see the effect on screen. The client keeps asking for wilder and more elaborate effects, and we see each one as the tempo builds. Finally, the client asks for one final big effect, and the rep, deflated, responds "Uh, no, we can't do that." The presentation is funny, fast-paced, has a narrative structure, and shows exactly what the company can do. Best of all, the tape made Flying Logos lots of money.

While you do not need an overall plot, the entire demo reel should look like a complete presentation—not a hastily assembled collection of images. Imagine the type of professional and artistically complete presentation you would want if you paid someone to do this for you.

Sound Advice

Music is very important, but there are two major pitfalls. The first you might not think about unless you have had to sit down and watch a lot of demo reels: Avoid slow music. I can't tell you how many times I've almost fallen asleep watching a reel, lulled by soft, lilting music. Keep the soundtrack upbeat, fast-paced, and exciting. Use sound that would keep your attention when you are already tired, which is often the state people are in by the time they get the chance to look at your reel.

The second pitfall can be easily avoided by following this simple rule: Don't steal commercially recorded music. There is plenty of production music available that you can use legally. Most video magazines list companies that sell "buy out" music, which gives you a perpetual license to use the material in your videos. I won't hire an artist who uses copyrighted music because it makes me worry about what else they might steal.

Copyrighted material should not appear in your reel in music—or anywhere else. If your imagery uses scanned photos, either make them completely indistinguishable from the original or make sure you have the right to use them. While there are many examples of things you should not use, be forewarned that the owners of the copyrights to Disney characters and everything from *Star Wars* and *Star Trek* have teams of lawyers that do nothing but sue people who infringe on their copyrights (Disney even went after a nursery school).

> **"Make your video not a second longer than you need to show the potential client what you can do."**

One reel I looked at recently included the opening credits from a popular TV show. It lacked a copyright notice or evidence that it was used with permission, so I became suspicious. The artist had merely intended to show that he could do titling in that style, but it was misrepresentational, and it infringed on a copyright as well. His chances of getting hired via that reel are very low. If you actually have created things for television or video, get permission to use them and include the copyright and "used with permission" information in your reel.

This also brings up proper crediting. I know someone who worked on part of a project, but put the entire thing on his reel, thus intimating that it was all his work. He got caught and was fired because of it. Let this be a lesson: If you did only part of something, indicate with text or voice-over exactly what your contribution was.

Finishing Touches

Once you have decided on all the pieces, you must assemble them onto tape. While you will not be getting paid to produce your own demo reel, this is no excuse to skimp. The tape should represent the best you can do, so use the best quality tape format you can. This may mean renting a studio, but doing so is worth the investment. And don't run off copies on your home machines; go to a professional duplicator that will make the best duplicates possible.

Besides having an informational title screen at the beginning and end of your tape, you should attach a label to the cassette that includes your company name, a contact name (usually you), phone number, and address. If you are mailing it out, include a single-page cover letter explaining what type of work you are looking for and a *brief* summary of your experience.

If you'll be making presentations to prospective clients in person, a good investment is a portable TV with a built-in VCR. These have gone way down in price, and offer fairly good image quality. A real benefit is that you can adjust them ahead of time to make sure that your graphics look the way you want them to. On many occasions, I've been unpleasantly surprised by how bad my video looked when played on the client's antiquated, badly-adjusted equipment.

While you're preparing your demo reel, keep in mind that it can make the difference between working and not working. The care and attention you give to creating it is one of the best investments you can make. ■

*Geoffrey Williams is director of Creative Business Presentations and a frequent contributor to computer-video publications. Write to him c/o **AmigaWorld** Editorial, 80 Elm St., Peterborough, NH 03458.*

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By Peter Olafson, AW Games Editor

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OH, THE THINGS I've done, and the places I've been! I've seen the pirates that haunt a system's outer rim run like hyenas from my homing missiles, and once the missiles ran out of gas, take up the chase again. I've broken through clouds to see city streets splayed out beneath me like a cracked windshield. I've seen the smokestacks of factories on airless worlds belching fire into space. I've seen imperial dreadnoughts sunning themselves in orbit like lazy whales, and I've seen the eiectric blue wormhole that leads into hyper space.

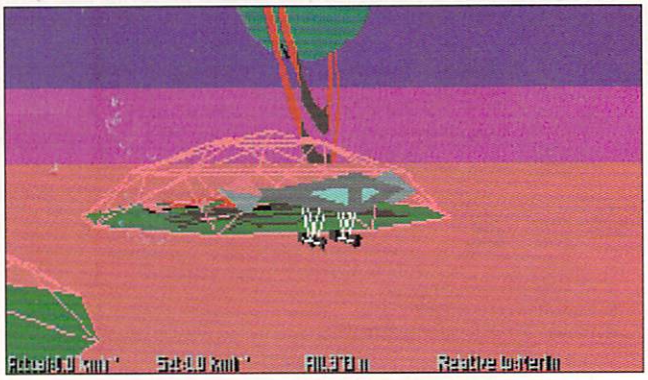
There is all this, and much more, in the great galactic wilderness that is Frontier.

Elite (written by David Braben and Ian Bell about 10 years ago) was the seminal space-trading game—perhaps the single most popular computer game of all time—and Braben's **Frontier: Elite II** (***Gametek UK***, about $35) must rank as one of the most anxiously awaited.

Essentially, this is a greatly articulated version of Elite, but there is enough here to make veteran Elite-ists feel quite at home. At its heart, Frontier remains a polygon-based three-dimensional Art of the Deal: buying low on one world, selling high on another (preferably one not too far away), and pumping the proceeds back into better equipment, pricier cargoes, and, this time out, new ships and crew members. There's no real structure: You can be as nice or as nasty as you wanna be—in theory, you can do anything, as long as you survive the consequences—and, as in Elite, there is really no reason to end the game, the only objective being your greater fame (or notoriety).

Then again, if you like, you can work within the system. Missions are available via BBS hookups when you put in at space ports or orbital stations. This might entail simply carting an innocent parcel to a nearby system... and it might mean running a gauntlet of killers who want to say a very special hello to one of your passengers. You'll want to take advantage of the opportunity to ask for details, negotiate fees (always nice to get some money up front), and determine in advance if there are special requirements.

I can't say enough about the cities. They're just for looks, natch, but they're amazing places just to fly over—rendered right down to numbers on the launch pads—and there must be hundreds of them on planets strewn across this slab of space, not a few with orbiting stations, like the huge 20-sided die (complete with elaborate girder spokes and moving collision lights) that hangs above planet Lave. The detail extends even down to call signs emblazoned on spacecraft, revolving radar dishes, and landing gear that is as delicate as a bird's wing. You just never know when something new is going to turn up, and I always approach this game with expectation and wonder.



No horse and buggy will do: You'll travel the great wide open via spacecraft to conquer the new Frontier.

It's all the more amazing when you consider that Frontier occupies not ten disks, not four, not even two, but a single hard-packed 645K executable file. (Curiously, a second disk contains only five saved-game positions that could have easily fit on the game disk.)

What else? Ah, you're probably wondering about docking. <Grin> It was a nightmare in Elite and, when handled manually, it's still a nightmare in Frontier. Happily, your ship comes equipped with an autopilot that will lower the landing gear, apply for clearance, and put you down on the tarmac as gently as if you were a baby, all to the splendid accompaniment of Strauss' Blue Danube Waltz (one of many classical pieces with which Frontier is scored).

Even so, watch where you put down your joystick. My cat wandered in, impatient for supper, and took a wrong step; suddenly I was *persona non grata* on planet Merlin. The local police may have questionable taste in lipstick, but they enforce the laws with a trigger-finger enthusiasm—whether the offense is an accidental discharge of ship lasers or the dumping of radioactive waste—and any notions of public safety are apparently secondary to the sight of your ship littering the launch pad.

Frontier is all polygons—and such detailed polygons you've rarely seen—but there is nevertheless a speed issue here. It's playable but jerky on a low-end machine like the A500, and a bit sluggish even on the A1200. I recommend an '030 processor to play the game in full detail and at full speed.

Beyond that, there are some... well, it's hard to tell if they're just quirks in gameplay or genuine bugs, but I suspect Frontier could have used another week in testing to iron out the bumps. ►

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Combat always seems to be a one-on-one affair (which may be merciful, but it's unrealistic, after all). Sound sometimes comes and goes unpredictably. Time compression can play strange tricks on the autopilot. (My ship showed a nasty tendency toward spontaneous combustion just before entering orbit.)

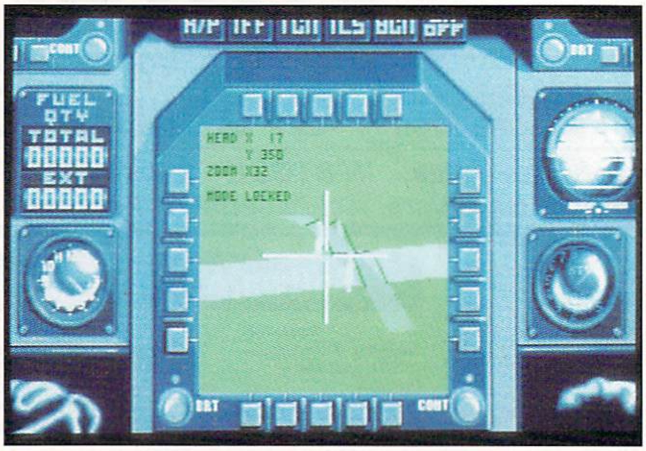
But here's a quirk that's no bug: I found myself yearning to go one more step and see more of this world than could be glimpsed through my windshield or vidcomm screen. I wanted to walk the streets, explore the buildings, talk to the people, get a day job (maybe reducing emissions from the fire-belching factories), and live a land life. Big as Frontier is, it wasn't big enough for me.

I don't offer this as criticism, but as evidence of how this wonderful space adventure whets the appetite, raises expectations, and encourages one to think in new ways about games without frontiers. Perhaps we'll see something like what I describe in an Elite III. I'm confident Braben could do it. After Frontier, I suspect the man is capable of just about anything.

COMBAT AIR PATROL

B+ 1.3 ✓ 2.0 ✓ 3.0 ✓
Hard-drive installable. *
Off-disk copy-protection.

I'M NOT MUCH of a stickler for realism in flight sims. I don't really care whether I have separate control over the rear rotor on my chopper in Gunship 2000, and I don't pass out from pique if my computer counterpart doesn't "red out" while pulling serious Gs. Instead, I tend to focus more on the visual and sonic gratifications—the explosions, the scenery, the external views of the plane—and consequently have a long-running love affair with games like F/A-18 Interceptor and F-15 Strike Eagle II that cater to pilots who want to feel more like passengers.



You'll be flyin' high during the Gulf War with Combat Air Patrol, the latest flight sim from Psygnosis.

You can add one more to that short list: **Combat Air Patrol** (***Psygnosis***, $59.95). This F-14 Tomcat and F/A-18 sim, set during the Gulf War, is probably the best Amiga "game"-type flight sim to come along since 1990's F-15 II. Once you get into the program, it's a great deal of fast-moving fun, with a wealth of rewards for eye and ear and rules of engagement simple enough to appeal to anyone who doesn't want to perform calisthenics just to blow things up.

In fact, CAP initially will probably put you in mind of the classic Interceptor, what with the carrier launch, rich, bassy jet-engine sound and trim gray dashboard. Like Interceptor, too, CAP is a snap to control: Light up the big engines, blast off and point your nose at the target. (What it lacks is that game's engaging weirdness.) And it flies like it's in a hurry—a big hurry. ►

SHORT TAKES

F17 CHALLENGE

D 1.3 ✓ 2.0 ✓ 3.0 ✓
Not hard-drive installable.
Copy-protection.

This budget-priced Pitstop-style arcade racer from Italian developers Holodream (about $20) is the first game published by *Team 17* I didn't love. The screen update is very fast (rather too fast on accelerated machines) and the scenery pretty, but it's also oddly cold, and in collisions, you're the only one who goes off the road. (And doncha think the title and roadside ads overdo the self-promotion a bit?) A misstep for a label that usually doesn't make them. You'd have more fun with Continental Circus. Weirdness Sighting: The default player driver is "D. Pleasance." (He's the general manager for Commodore Europe.)

NIPPON SAFES INC.

A– 1.3 ✓ * 2.0 ✓ 3.0 ✓
Hard-drive installable. *
Copy-protection.

This luscious animated adventure has a resumé as long as your arm: Set in Tokyo and written in Italy, it was first slated to be published in England by DMI, only to wind up back in Italy with *Dynabyte* (about $35) when DMI went under.

In other words, it's a survivor, and for good reason: They've managed to make every element playable or simply fun. Nippon Safes has the first interactive introduction I've seen and a delightful character-selection scheme (there are three, and wait until you see which one you get!) that doubles as copy-protection. The graphics are sharp, hi-res snapshots perched in the middle of the screen, and the puzzles display a Future Wars-like affection for minutiae. And the atmosphere... well, it's very strange.

The only conceivable drawback is that you may have to play from the five disks. Nonstandard floppy formats and hard disks just don't get along, and Nippon regularly locked up or bounced back to DOS on NTSC machines during the installation routine. At least they tried.

OVERDRIVE

C+ 1.3 ✓ 2.0 ✓ 3.0 ✓
Not hard-drive installable.
No copy-protection.

If Overdrive (Infacto, $59.95) was a racehorse instead of a hot-ticket multi-directional shoot-'em-up, I'd bet the farm on it. I mean, what are the odds that a game started in 1989 would appear in the fall of '93? And for that matter, what are the chances of two games called Overdrive—the other one, a racing game from Team 17, will be reviewed next issue—turning up within a week or two of each other?

Four years in the smokehouse suggests the Infacto Overdrive is likely to be either pretty neat or a bit dated, and in fact it is a bit of both. It positively reeks of style even when you just put in the wrong disk. You won't easily find a more polished or feature-filled shooter—the selection screens alone kept me occupied for a half-hour—and I have a decided weakness for taking on the battleship-like, multi-gunned edifices that it likes to throw at you.

But while the technical specs are impressive, the game turned out rather dull—lots of chrome and little electricity. The enemies typically fly in brain- ►

Frankly, there's not much CAP doesn't do distinctively. I can't leave off without mentioning how you can smoothly (at least on a 25 MHz A3000) rotate your point-of-view inside the cockpit (a Strike Commander-like first on the Amiga); the nifty damage-assessment fly-bys in the post-flight debriefing; the great array of digitized crackles from wing men over the radio; the terrific detailing of the aircrafts' exteriors (including the smallest of nuances); the option to start your mission over the target; and the ability (not tested) to fly head-to-head via modem. Who wouldn't love this game?

Uh, possibly me. (I just like it a lot.) For all the passenger-friendly toys, there's apparently no auto-pilot to keep you in tow if you get lost. It's been tailored to run smoothly on any Amiga—and so performs well even on a plain-vanilla A500—but like another famous low-ender, Knights of the Sky, it's a bit too fast on speedy machines even at full detail. Psygnosis has included a keyboard chart, but it's awkward to consult; a keyboard overlay or a reference card you could prop up on the machine for instant command identification would have been much better.

There's a certain hard-to-describe lack of intimacy in the way the aircraft occupies space. And while I'm grateful for the up-to-date absence of a European theater, I'm not sure the Gulf War—relative target practice where wars are concerned—is a strong enough substitute. (The designers might have been better off inventing their own scenario, à la Interceptor.)

Finally, it was hard getting to the fun parts. I couldn't get the game to run from hard disk on an A1200; all I got were requesters reporting that the program couldn't find the main executable. It wouldn't even install on a 1.3-based A500. (The installation program couldn't find IconX in my C directory, and when I copied that command into the game directory, CAP tore through the script without installing a thing.) It installed and worked from HD without a hitch only on a 2.04-based A3000.

Then there is the issue of copy-protection. You're asked to look up specs for various weapons systems and planes in the manual. Nothing out of the ordinary there. Except that the info is in small black type against a background of mixed grays and on widely separated pages—a confusing state of affairs that has users posting messages to the nets saying they couldn't find the protection. Hey, Psygnosis, it's the planes that get camouflage, not CAP.

Oh, and by the way, good game! ■

MORE SHORT TAKES

less patterns, are too small to stand out from a cluttered playfield, and are easily confused with the external weapons modules that accompany your craft. It's a case of too much too late. In 1989-90, this would have been an easy hit. In 1993-94, I wouldn't bet on it.

Humans II: The Jurassic Levels

C– | 1.3 ✓ | 2.0 ✓ | 3.0 –
Not hard-drive installable. Copy-protection.

Want to run that by me again? This is no more Humans II (*Gametek UK*, about $35) than Oh No! More Lemmings was Lemmings II. (The title property belongs to EID.) They've slapped the label on the stand-alone version of the Human Race data-disk set, added sturdier packaging and more accessible copy-protection, and removed the cute accessories that came with the original version. If you've already played the add-on, keep a wide berth of this doppelganger.

Then again, if you haven't you will find these 80 new levels of Lemmingesque puzzle-solving just as engaging to play and gorgeous to look at as the original game...and all the hard work for trivial reward, the disk swapping, and the long loads just as irritating.

A320 Airbus

B | 1.3 ✓ | 2.0 ✓ | 3.0 ✓
Hard-drive installable. Off-disk copy-protection.

My fighter pilot half yawns and says, "Wake me when we get there." My airline pilot half punches him out, and assures me that "getting there is half the fun," and this time he came out on top.

Thalion's first US release for the Amiga ($49.95) is actually more of a pilot simulator than a flight simulator. You can't just light up the engines and point your nose at the clouds. You'll need to master the science of flying a big two-engine passenger jet. You'll need to navigate instead of just fly. In essence, you'll need to think and not revel in the experience—think about things like fuel, clouds, staying on course, and the collective meaning of a wide array of gauges and controls.

It's not as gamey as you might expect; in a sense, it's not a game at all. And if you just like to buzz town hall with a Foxbat on your six, I wouldn't recommend A320. No explosions. (Not even when you crash, I'm told.) Not much detail or color out the windshield. A320's satisfactions—and they do exist—aren't of the moment, but slow-building and cumulative, and, much like Virgin's Shuttle, the game rewards an exacting, meticulous approach. You'll want to take your time with it. (Indeed, you'll have to, as A320 comes with more books than you have to buy for some college courses.)

So fly your fighters. Buzz town hall. Enjoy the moment. When you're ready for something a little more sophisticated, come back for A320.

Bob's Bad Day

A– | 1.3 ✓ | 2.0 ✓ | 3.0 ✓
Not hard-drive installable. Copy-protection.

Another one of *Psygnosis'* unheralded little surprises, Bob's Bad Day ($49.99) is actually a novel concept: A pick-up-the-coins platform game in which the player stands still (and is invisible!). You use the joystick to revolve the levels around him and gravity—both the normal "what goes up ..." type and the game's infuriating specialized varieties—to make him move where you need him. The overall feel is similar to the precarious one of those hand-held get-all-the-balls-in-the-holes puzzles—a balancing act at once vastly irritating and vastly compelling. You may love it, and you may hate it, but, either way, you'll play it.

One Step Beyond

B+ | 1.3 ✓ | 2.0 ✓ | 3.0 ✓
Not hard-drive installable. Copy-protection.

The name fits. One Step Beyond (*Ocean UK*, about $35) is a neat turn on Pushover. This time, the dominos aren't standing up for you to knock down in clever ways. They've been reinvented as platforms jutting out from a wall—the idea is to close all of them—and big-jawed dog star Colin Curly leaps between them with a variety of effects (depending on the type of platform) upon landing.

This is a natural extension of the original puzzle game's theme, and the basic playability of Pushover's still out in force. Unfortunately, Colin jumps in and out of a bag of Quavers crisps (something like cheese puffs) at the beginning and end of each level. And unlike McDonald's transparent sponsorship of Virgin's Global Gladiators, that lends One Step a slightly cheesy sensation of taking part in a promotion instead of a game.

To locate vendors of the games reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 92.

AGA Games

James Pond II: Robocod

B– CD32 ✓ A1200 available.

Millennium has an interesting problem here: They created a game that was too good. The original Amiga version of this durable platformer—featuring a versatile fish with big, bright cartoon eyes—was so playable, and looked so pretty, that the 1200 and CD32 versions have had to struggle to top it. The 1200 version added new levels, marginally better graphics, and hard-disk installability. The CD32 version (about $35) keeps the levels and the graphics and throws in more music.

Verdict: If you haven't played it before, sure, grab it. This is the definitive version of an Amiga platform classic. But if you have, you're unlikely to be all that impressed with the little perks. I'd wait on James Pond III.

D/Generation

B+ CD32 ✓ A1200 –

This angled-down arcade/puzzler (*Mindscape UK*, about $35) didn't get much play in the media when it turned up on disk a year or so back, and this CD32 release should correct that. In part because it's one of the first games available for the CD32. And in part because, well, it's a pip.

The 256 colors of the IBM original are in here, but you probably won't notice. They're a pretty subtle bunch, and you'll be way too busy scheming how best to beat a path through the insidious traps and odd critters that populate this huge genetics lab. (A nice touch is that you can also rescue members of the lab staff by leading them out past those same tricks and traps.) A solid mix of brains and action, and addictive as hell; I was up until all hours. And all just to deliver a package. What, no tip?

Overkill

B– CD32 planned. A1200 ✓ Not hard-drive installable. Copy-protection.

Overkill (*Mindscape UK*, about $30) is a very sharp-looking Defender-style shooter, and for the first few levels it's more than just sharp-looking. While one of the most cloned games among the classic blasters—Datastorm and Anarchy being prime examples—this one puts the little men on the ground to good strategic use.

I was going to say it has a patient difficulty curve, too. But long about the third or fourth level, you start getting killed right at the start by enormous off-screen sprites you can't avoid. Ouch. No fair!

Diggers

B CD32 available. A1200 ✓ Hard-drive installable. No copy-protection.

I actually like this exploration and resource game (*Millennium*, about $35) better on the A1200 than on the CD32. Maybe it's the crisper monitor display. Or maybe it's the mouse control, which speeds up the pace significantly over the CD32's joypad. You're using it to control a team of five tiny men mining (in side-view) for a range of jewels, warping back out and selling 'em for the right price (you hope) and using the money to buy equipment that will permit them to dig for more jewels.

It's really an accomplished and solid design—everything fits into place, y'know?—but I do think there's an element missing somewhere in the recipe that would move it into classic territory beside Lemmings, rather than standing on its little blue coattails. As it is, Diggers doesn't have quite enough <gulp> depth. ■

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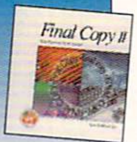
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HELP KEY

Tim chases away the winter blahs with better modems, bigger displays, and boosted systems.

By Tim Walsh

Phone Improvement

Q. *I purchased a Baud Bandit 2400 modem for my Amiga 3000 three years ago. I'm now experiencing problems uploading files—errors appear, then the connection is terminated. I have no problem downloading files or connecting to major networks.*

Both the manufacturer (Progressive Peripherals) and the distributor (Briwall) have gone south, leaving me stranded. Where can I turn for help?

Wynee W. Tsao
Euclid, Ohio

A. Turn right here, Wynee. Your trouble may not be fault of the modem. The wording you use makes it sound as though the upload problem occurs when you're not logged on a network. This might indicate that the problem is the phone line.

Try to isolate the trouble. If, after doing so, you determine that the modem is indeed the culprit, I recommend buying a new one instead of getting the old modem repaired. Repair costs could run as much as a brand-new unit. Besides, your 2400-baud modem uses dated technology.

If you're willing to wait on a back-order list, you can get a 14,400-baud modem for around $100. Mac Warehouse (800/255-6227) is selling the Technology Concepts 14.4 Data Modem (part # BND-0249) for a mere $99 plus shipping. The modem is shipped with Macintosh software, which you could donate to a school or give to a friend. Match it to a good Amiga telecommunications program (see "Help Key," Dec. '93, p. 94 for recommendations) and you and your Amiga will be in telecommie bliss.

Screen Tests

Q. *I teach biology in a classroom equipped with large-screen television monitors. Here's our problem: Students feed data into a spreadsheet on our seemingly steam-powered Amiga 1000, and the results appear on the computer's monitor. Rather than let the large-screen TV monitors sit idle, is there any way to direct the NTSC output from the Amiga to the monitors? Remember, we're talking tight budget here!*

Frank Heppner
Professor of Zoology
University of Rhode Island
Kingston, Rhode Island

A. I've experimented with *AmigaWorld's* nightclub-sized Mitsubishi TV enough to know that it doubles effortlessly as a composite computer monitor. Because the A1000 (and other Amiga models) are capable of a small variety of NTSC output signals without extra hardware, the input limitations of your large-screen TV monitors will determine their usefulness.

First, look on the video-connector section on the back of each of the TV monitors. If you see provisions for more than one type of video input, you could conceivably output directly from the Amiga. While it may sound far-fetched today, both Tandy and Sears once sold large "TV/monitors" with auxiliary nine-pin RGB computer inputs. If either of your TV monitors have such inputs, you could plug the A1000's RGB cable directly into the RGB input, set the monitor to RGB mode, and it should work just like a slow-scan computer monitor.

More likely, there are RCA-type jacks marked "Video-In," "Chroma," or "Luma" in the video-input areas of the TV monitors. If so, you're in luck, professor. Facing the rear of the A1000, the rightmost RCA-type output jack is marked "VIDEO." Just run an RCA-type cable from that port to the TV monitor, and plug it into the video jack, or get a Y-connector and split the video-signal output between the Chroma and Luma jacks. Noninterlaced lo-res (320x200) color output from the Amiga should then appear crystal-clear on the TV. Best of all, the output to the large-screen TV will be independent of the A1000's monitor, so students can sit in front of the computer monitor and type, while the rest of the class watches the TV monitor.

Finally, if the TV monitors lack any type of video input, and use either an antenna or conventional coaxial cable (not likely), you'll need to find the original RF converter that came with the A1000, or pick one up at a used computer store.

Pump Up the A2000

Q. *I have an Amiga 2000 that I would like to upgrade. Is it possible to bring this system's performance up to the level of an A4000/040?*

Rodrigo Espurtia
FPO AP

A. As A2000s go, it's possible to bring the graphics and speed beyond the level of an A4000, but it'll operate as a decidedly different beast. The first step is to install version 2.1of the Amiga's operating system and have the video chip set brought up to date. You can do the former and have a dealer do the latter. Processing speed can be addressed with any of several 68040 accelerators from GVP.

While installing one of many available display boards in the A2000 will improve the machine's video output, you should decide on your primary usage before buying. For instance, if you're seeking video work, NewTek's Video Toaster might be the board of choice. To get one of the best values in an outstanding artistic board with a top-notch paint program (OpalPaint) to match, look no further than Centaur's OpalVision. To keep the nature of the computer intact, you may want to consider Expert Services' retargettable Picasso II, GVP's Spectrum, or Impulse's Firecracker. Finally, the latest version of the software for the Retina board from MacroSystem US touts AGA emulation. ■

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NEWEST DISKS

WB139: MIDI Performance Manager Utility to manage a MIDI synthesizer and other MIDI equipment. Requires WB 2+.
WB138: 3.0 Extras #2 - Another disk chocked full of utilities to unleash the power of Workbench 3.0 and AGA!!
WB137: The ARexx Guide - Full AmigaGuide (inc.) document to teach you ARexx!!! Tip-filled with easy x-referencing!
WB136: Terminus - WB2.0+ Modem/Terminal program, full featured: scripts/screenmodes/overscan etc.
WB135: 3.0 Extras #1 - 13+ utilities for WB 3.0. Several must-haves for getting the most out of your new graphics modes!
WB134: 3.0/AGA Blanker - BlitzBlanker for WB3.0+ 14 different blankers to really show off your AGA machine!
WB133: Panasonic Studio - Special printer Preferences editor and driver system for all Panasonic 9 & 24-pin printers.
WB132: Canon Studio Version 2 - Special printer Preferences editor and drivers for BJC 600, 800 & 880, LBP, A1, A2, BJC 800, BJ 5, 10, 20, 200, 230, 300, 130.
WB131: Magic Workbench - Make your 2.04+ Workbench sizzle with style with these 8-color dithered icons. Easy auto-installs in minutes. Req.'s WB2.04+ and hard drive.
WB130: ToolManger 2 - The ultimate tool manager for your Workbench. Add animated icons, sound effects and 'docks' of programs to your WB..very useful! Req. 2.0+ and hard drive.
FD92: Blast'em - contains Scorched Tanks--a tank battle with futuristic weapons/defenses & "great" graphics. Galactoid is a Galaxian/Space Invaders game completely Amiga-tized.
FD91: Popeye - A clone of the original C-64 classic--Amiga style with enhanced graphics. Requires 1MB chip RAM for PAL mode.
FD90: Conquest & Dominion - Conquer the known world and maintain dominion over it--a microcosm of economic survival.
FD89: Kastle Kumquat - A thoroughly entertaining and challenging maze/adventure game. Great soundtrack and graphics. Req's 1MB Chip RAM (for PAL mode).
FD88: AmyBoulderdash - a clone of the original classic.. extremely well done complete with level editor, 2 complete sets of levels and a level editor. Requires Workbench 2+.
FD87: OXYD- A commercial quality game--similar to Marble Madness in nany ways, but allows two computers to link & play together...see how many of the 200 landscapes you can complete without having to get the hint book!
FD86: UChess: The strongest playing Chess program available for the Amiga period. Req. 68030+, Workbench2+, 4MB RAM or more. Supports AGA (req. 8MB!)
DD92: Developer Contains the official Commodore developers kits for the AmigaGuide and Commodore Install Utilities...a must have for all serious developers.

FUN DISKS

FD6: GAMES! - This disk is chock full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.
FD7: Pacman - This disk contains several pacman type games including; PacMan87, MazeMan and Zonix.
FD10: HackLite - A dungeon adventure game. Considered a must-have classic. This is the 2nd release of this game. Great graphic interface. Play time several weeks!
FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features. Also Thirty-One,VideoPoker and more.
FD12AB: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).
FD13: Board Games - contains Monopoly, Dominoes, Paranoids, and others.

DD83: IBM - Not one, but *TWO* IBM emulators that will allow the running of MS-DOS software *with* Amiga programs!!! Comes complete with programs to turn your Amiga floppy drives into 720K IBM compatible drives. Also, check out our PC-Task emulator on our DevWare Video page!

FD17: Educational Games - This disk includes several games for youngsters including geography, math, science, and word games, also includes Wheel of Fortune.
FD20: Tactical Games - MechForce; A game that simulates combat between two or more giant robots. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.
FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.
FD31: Games! - Air Traffic Control - a good ATC simulation, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrinth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.
FD32: Flight Simulator - An instrument simulator for a DC10.
FD33: Arcade Games - Ffreddy a Mario Brothers type of game, Gerbils a target practice game, PipeLine a German interpretation of Pipe Dreams, Tron a light cycles version, and Wetroids a wonderful version of asteroids with a hilarious twist.
FD35: Omega (v 1.3) - An outstanding dungeon and outdoors adventure game in a similar vein as hack, rouge, and moria. This version is considerably faster and better that all previous versions. Play time: weeks.
FD38: Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card came, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

WB105AB: Workbench 2+ Extras #2

This set contains the programs that should have been included with WB2+. These powerful utilities take full advantage of the many new capabilities that are available in Workbench 2+. Includes: Tool Manager - a wonderful utility to add programs to your TOOL menu, Virus Protection - Degrader, Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files. Bitmap Font Editor, Screen Blankers - ala fractals and spliners and swarming bees! Requester Enhancers and CPUBlit. Two disk set, counts as two.

FD39A&B: Star Trek, The New Generation - This is a completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Excellent!!! Counts as two disks. Requires 512k
FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.
FD57: Arcade Games - Includes 2 truly commercial quality games. MegaBall, an Arkanoid-ish game, features 5 musical scores and addicting gameplay. Gravity Attack is a psychadelic trip through several different worlds—each different.
FD59: Game Potpourri - Xenon III is an almost exact clone of the commercial game of the same name...a great shootemup. Crossword will take lists of words & automatically generate word-search puzzles for any Epson compatible printer.
FD60: Games - In Nebula, race over a 3d world to destroy enemy installations. Interferon; a *great* Dr. Mario clone. Enigma; is it a game or puzzle?
FD61: Games - Solitaire; great graphics, plays two versions. Klide; an interesting piece of eye candy. Extreme Violence; 2 player kill or be killed game. YATC; A Tetris clone with Artifical Intelligence. Genesis; create realistic 3d fractal worlds.
FD62: PomPom Gunner. An extremely smooth and well done World War II gunner simulation. Req. 1 megabyte of memory.
FD64: Games - Wizzy's Quest - a "great" 50 level game with great graphics, Cubus - a 3-dimensional Tetris type game (rotate and move in 3 dimensions). Husker Du - Colors and pattern rather than shape in this Tetris-esque game; 5 screens and 3 levels of difficulty. Requires Fat Agnus (1 Meg of Chip)
FD67: Arcade - Includes Llamatron a well-done 'Robotron' clone. Hate is a "terrific" Zaxxon clone with multiple levels/worlds and smooth diagonal scrolling...a 10!
FD69: MindGames - Had enough of shoot-em up games? Relax and let these 21 games exercise your mind instead of your wrist.
FD73: Arcade Series - Intruder Alert! is a MULTI-level "Berserk" clone. Features smooth gameplay, great graphics & digitized sound f/x.
FD74: Arcade Series - RingWar is an "Outer Limits" clone with vectorized graphics. MotherLode is a "Lode Runner" clone with 50 levels! In BlitzTanks, they're coming at you from all directions!! Call in air strikes and use your heavy artillery to survive!
FD75: Arcade Series - Descender is a clone of the classic arcade game "Tempest"; complete with vectorized graphics. Tanx is the classic battle of trajectories and inertia between two tanks—incredibly well done! Search is a maze game unlike any other—included is a level editor too. (Tanx requires 1 meg chip memory=Fat Agnus)
FD77: Arcade Series - Galaga'92 is a clone of the arcade game with several gameplay enhancements--with smooooth, sharp graphics, it's better than the original! Pharaohs Curse is a clone of the original C64 classic. Diplomacy is a beautifully computerized version of the Avalon Hill board game--conquer or be conquered!

THE AMIGAWORLD "BEST-OF" SET

FD85ABCD: AmigaWorld's Best - These four disks contain the *hottest* p/d games of '92! Includes Mother Lode, Moria, Minefield, Poing, Intruder Alert, Deluxe PacMan, Rocky and Super Artillery (see Dec. '92 AmigaWorld) Four disk set, counts as three.

FD81: SuperGames - Some of *the* best games--Donkey Kong is better than the original *with an extra level!* Frantic Freddie and TrailBlazer are both fast-paced arcade games. Mad Bomber is the classic game of "Kaboom" redone with an Amiga flare. All of these games are excellent!
FD82: Intrepid - In the Arctic ice, you control a tank on a mission to rescue hostages in this superbly crafted Amiga original.
FD84: Games! Deluxe PacMan is better than the original--20+ mazes, special "power-ups" with *oustanding* graphics. ThinkAmania is the classic game of concentration--with *beautifully* drawn HiRes images.

WORKBENCH DISKS

WB4:Telecommunication - This disk contains several excellent pd communication programs: Access 1.42, Comm 1.34 & Handshake 2.12a. See also WB102 & WB115.
WB5: Fonts #1- 35 bitmap fonts. Also included are five PageStream fonts,and ShowFont - a font display program.
WB6: Fonts #2 - ShowFont allows you to quickly and painlessly view all 256 characters in a typical font. Includes large AmigaDos system fonts (many up to 56pts).
WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.
WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.
WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!
WB13AB: Printer Drivers and Generator - over 70 different drivers (including HP LaserJet 3 & 4!), also includes a printer-driver generator. Two disk set counts as two.
WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).
WB18: Word/Text Processors - This disk contains the best editors. Includes,TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features,TexED(v2.8) an enhanced Emacs type editor, and a spell checker.
WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.
WB23: Graphics and Plotting - Plot, a 3-D mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map IFF image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere.
WB25:Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.
WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.
WB33:Circuit Board Design - several terrific routines for the electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.
WB35: 3D Graphics - This disk contains 3Fonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoIFF - create 3d animations preserves pallet, World3d - a demo of a front end for use with DKBRender.
WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbench, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one!
WB37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15
WB38: Plotting and Graphics - Plotxy is a powerful full featured plotting package. Used by many colleges and universities. Highly recommended. Plans - a incredibly well done Computer Aided Drafting program, very full featured. Tesselator - a program that helps generates fantastic looking, recursive M.C. Ecsher type pictures.
WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program. Version 3.20--compatible with WB2+.
WB43: Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Req. 1.2 MB

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QT3: THE A64 PACKAGE *VERSION 3* - A very complete Commodore 64 emulator. Supports any CPU and is fully compatible with WB1.3 & 2.0 and now 3.0! This version includes a special adaptor that will allow you to connect your 64's 1541 disk drive to your parallel port of your Amiga for total emulation. All-new transfer software! Special price $59.95 -with hardware.

WB46: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads ,...), people, & transportation.
WB47: Clip Art - Hires clip art. Motifs - hair, drafting, summer, animals and macfood.
WB48: Clip Art - Hires clip art. Motifs - Holidays, music, medical, and misc.
WB50: Animation - Seven of the best euro-style animations or "Demos", including - scientific 451, subway, sunride, thrstdemo, tnight, waves, and woow.
WB53: Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings..., and surreal images. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...
WB54: Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and more.
WB55: Application - XCopyIII - a full featured disk copier, make backups of copy protected disks. RoadRoute - find the quickest route from one city to another, highway description included. Diary - a diary program like "Dougy Houser M.D", Cal - a calendar program, Magman - a database tailored for articles and publications.
WB57: Animation - This disk has several "Demo" style animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenomorph.
WB62: Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timebase, display midi info, file sequence player, and a few scores.
WB63: Disk Utilities #3 - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, and forced disk validation of corrupt disks.
WB66: Icons #2- Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.
WB69: Music - 90 minutes of classical and modern electronic music for you Amiga.
WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss)
WB79: Home & Business Accounting - Includes Ckbacct - the most complete checkbook accounting program going, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worldtime - find out what time it is in up to 50 global cities.

WB119ABCDE: Font Set This collection contains over 100 typefaces for use with Professional Page/PageSetter 3+ or PageStream 2.1+. These fonts will output to any laser printer or dot-matrix printer with no jaggies, thanks to outline fonts. Very pro-looking. *5 disk set, counts as 4.*

WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.
WB82: Animations - Four full length, well done "movie" style animations. Including, Coyote, JugglerII, GhostPool, & Mechanix. 2 disks, counts as 1.
WB93: Workbench 1.3 Extras #2 Contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurubuster)and PrintStudio.
WB95: Checkbook Accountant 2.1 - Definitely commercial grade; we've seen many checkbook programs and this is the best. Full budgeting, transaction recording & report generation.
WB96: Dupers - Contains XcopyIII & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.
WB99: Lifestyles - Includes AGene—family tree program that tracks up to 600 people/marriages/etc. Landscape is a CAD program to create gardens/landscapes. Loom simulates an 8 harness loom; experiment with pattern design with instant feedback.
WB102: Telecommunications - Contains the programs NComm 2.0 and VT100-29B. Zmodem protocols, XPR protocol support, full VT100 emulation. NComm's script language is so powerful it can create a full-featured BBS system.
WB106: Home Manager - This is a great all-in-one address book with an autodialer/notepad/to-do list/appointment scheduler/home inventory database and phone number dialer.
WB108: OctaMED - This breakthrough program doubles your Amiga's sound capabilities from 4 channels to an ear-popping 8 channels! All the renound editing capabilities of MED plus 4 more channels! If you thought your Amiga sounded good before...you aint heard nuthin' yet!
WB109: VerseWise - Display, search and print The New Testament.
WB113: Sid II - Why pay 40 bucks for a directory utility, when this one will do it all plus much more! A truly professional-caliber program. Sid 1 was our best, now *completely* rewritten, Sid 2 will astound you.
WB114: Fonts #4 - Contains 36 bitmap system fonts.
WB115: Telecommunication - If you have AmigaDOS 2.04+ and a modem, then this is *THE* program for you. Term *totally* conforms to the User Interface Style Guide for 2.04, has an ARexx port, and supports all popular file-transfer protocols through XPR libraries. We wish all programs were this good.
WB116: Databases - This is what you've been waiting for! Contains 5 uniquely specialized database programs for tracking: Videotapes, CD's, Magazine Articles, Comic Books and Trading Cards!
WB120: Grinder - a complete graphics conversion package that supports GIF's, JPeg, Neochrome, Degas, PCX, Targa, TIFF, HAM-E and IFF format pictures. An invaluable tool for all desktop-videographers and desktop publishers.

WB118: Amiga Beginner - *You asked for it!* A complete tutorial for the beginner on using the Amiga. Starts you off at the power-switch and takes you through to the CLI/Shell and all points in between. *Bonus!* Also included are 16-color icons to replace *every* icon in your 2.0+ Workbench.

WB121: ProPage3 Enhancer - This disk contains over 40 "Genies" for use with ProPage 3.0, including useful ones like Make Pie Chart and Resize Text to fit Box to name a few. Also includes structured & bitmap clipart for unique borders...a *must have* for all PPage 3 users.
WB122: System Optimizer - KCommodity enhances your system, gives memory meters, mouse/keyboard enhancements, online timers plus *many* others...too numerous to list! REorg will optimize hard and floppy-disks for a big speed increase. HDMem will allow you to use up to 2 megs of hard-drive space for virtual memory! (Req. 68020+ w/MMU) All programs require 2.0+.
WB123AB: Flags of the World - same as WB124, but for Workbench 1.3. Req. 1MB. 2 disk set, counts as two.
WB124: Flags of the World - Two modes: click and learn or a game to test your knowledge. Great graphics--fantastic learning tool. Has current Russia & Yugoslavia republics. Req. Workbench 2.0+ & 1MB RAM.
WB127: Blankers - Over 20 different screen blankers. Most run on Workbench 1.3+...a few require 2.0+
WB128: ColorFonts - contains 12 color bitmap fonts for use with DPaint or any software that supports ColorFonts.
WB129: Super Virus Killer - From Safe Hex Int'l, who catalogs and kills Amiga Viruses *worldwide*--a complete virus system that knows all Amiga viruses...updated often. Req. WB 2+

DEV DISKS

DD54: Compression - This disk is loaded with all of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc, Lharc, Lhwarp, Pkax, PowerPacker a must have by all, Zip, Warp, and Zoo.
DD71AB: C Compiler - This disk contains DICE, Matthew Dillon's full featured, powerful C compiler & environment. 2 disks, counts as 2.
DD86: The Programmer - Includes GadTools and REQTools which will allow you to create your user interfaces and then the program will automatically generate "C" source code or Assembly-code. Requires, and writes code for, AmigaDOS2+.
DD89: UEdit - Probably *the* most powerful text editor ever written for the Amiga. Previously commercial, now public domain. Req 1 MB.
DD91: ParBench - Allows you to easily connect/network two Amigas/CDTVs together and share storage devices. Req's custom cable (docs to make cable included--easy).
DD90: Advanced Utilities - CompressDisk doubles the capacity of your hard-drive on the fly with compression!!! Also contains: disk optimizer, SCSI mount utility, Keymap editors, Enforcer, Undeleter & more. Most programs require 2.0+.

VIDEO DISKS

VO9: Imaging - Included on this disk are the indispensible utilities, Rend24, ViewTek and the JPEG utilities. Rend24 is invaluable for 24-bit animators allowing for previews on AGA and non-AGA Amigas. ViewTek plays back anims of all sorts including Anim 5, 7 and 8 formats. JPEG utilities facilitate the transforming of IFFs into space-saving JPEG format.

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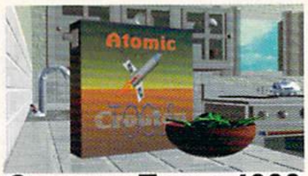
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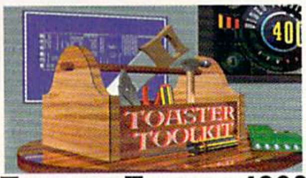
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Amiga Video Vol. I & II	V4059	$29.95
DeluxePaint IV 4.1 + Both DPaint Videos	T3073	$135.95
DPaint IV Video Guide + DPaint IV Advanced Techniques	V2062	$34.95
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SONY EVO-9700 Training I & II	V4012	$46.95
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Animation - Entertainment

Computer Animation Festival New Release! Miramar brings you 21 award-winning computer animations mixing humor, adventure, song and fantasy into 45 entertaining minutes. V2035 **$17.95**

The Mind's Eye	V2043	$17.95
Beyond the Mind's Eye	V2044	$17.95
History of the Amiga Sale!	V2042	$11.95

The Amiga Video New Release! V4058 **$14.95**
DevWare and The Burgess Video Group has put together this appetizer video on being productive with your Amiga. you will learn tips on morphing with Morph Plus and ImageMaster, image processing with Art Dept. Pro, desktop publishing with PageStream, word processing with Final Copy II, animating with Real 3D, tips on DeluxePaint IV, and much, much more. 55 mins.

The Amiga Video V2 New Release! V4039 **$19.95**
This second "appetizer" will give you tips on graphics and video ffects using ImageFX and DPaint IV. Multimedia script conson with HyperBook, font manipulation with TypeSmith, plus a gude to AMOS and more video tips. 55 mins.

Animation - Instructional

Animation 101 Best Seller! From Myriad Visual Adventures, a complete course in real-time animation for video. It demonstrates cartoon and industrial animation in high resolution, using basic software and relatively inexpensive hardware. Part one shows you a variety of animation techniques--with humor. Part two shows in detail how the animations were made. V2078 **$24.95**

Amiga Animation -- Hollywood Style Learn classic, Hollywood,Disney-style techniques using DeluxePaint IV and Disney Animation Studio, from renowned Amiga animator, Gene Hamm. Especially for artists who are computer novices and computer users who don't draw with a mouse. 30 minutes V2051 **$19.95**

How To Animate I Sale Price! Relevant to novices and intermediate users alike. Pick up helpful tips and techniques on using DeluxePaintIV from Joel Hagen, and using LightWave 3D from *AmigaWorld's* Lou Wallace. 45 min. V2059 **$16.95**

Amiga Books

Mastering Toaster Technology



The only how-to, hands on guide to using the Video Toaster. Follow step-by-step instructions that teach you how to use the Video Toaster to create perfect 3-D logos, static and traveling mattes, and 3-D animation from CAD files. Learn to unlock the potential of the Toaster by rotoscoping and combining ToasterCG, ToasterPaint and LightWave to create stunning visual effects. Just added are two supplementary tutorials tailored for Toaster 4000 users. Learn to master the alpha channel with LightWave, ToasterPaint and ToasterCG, and to rotoscope from RAM. Bonus 2 disk set filled with 3-D objects, a beveled & color font set, anim wipes and clip art. B106

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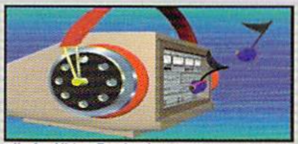
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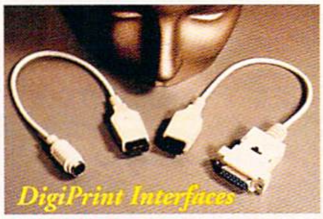
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THE LAST WORD

Kudos, complaints, comments, concerns, and contributions from our readers.

Online Omission

In your article on the Internet ("Cruising the Internet," Jan. '94), the author credits Delphi as the only on-line service offering full Internet connections. Your readers will be interested to know that this statement is simply not true. Portal, which made available Internet services to its users before Delphi did, offers a full Internet services menu at no charge, with absolutely no limits on FTP, Telnet, IRC, etc., not to mention a fully Internet-connected e-mail system with no extra receiving or sending charges and with no limits to the length of incoming or outgoing letter.

Harv Laser
Torrance, California

*Thanks for the correction, Harv. (Harv is the steadfast moderator and sysop of the Amiga Zone on Portal.) Of course, this was an inadvertent oversight on the part of **AmigaWorld** editors, who are familiar with Portal and consider it one of their favorite on-line services. We hope that this blunder caused no confusion or inconvenience among our readers.—Eds.*

Everybody's Business

I have to agree with Fred Mason's letter (Nov. '93) about not having any good word-processing and database programs. True, the Amiga is being well-recognized in Hollywood for being a great low-cost graphics/animation machine. But is this the only reason for buying an Amiga? In order to compete with IBM and Apple, we also need good business programs. [Because *AmigaWorld* is] only covering the latest in graphic/animation hardware and software that only strengthens the belief that, "The only reason you get an Amiga is for the Video Toaster." I do have one suggestion. If Commodore would consider opening talks with some of the big software guns like Microsoft, Lotus, WordPerfect...people might buy the Amiga instead of a clone or Mac. At least we'd finally get a decent spreadsheet.

I'm a loyal Amiga user, but I'm considering buying a PC clone to get some of the programs the Amiga doesn't offer. I don't like the idea but what else can I do?

Christopher Rucker
Southfield, Michigan

I have recently purchased an Amiga and thought that subscribing to *AmigaWorld* would keep me abreast of developments in the use of Amiga computers. I wanted a word processor, so I looked in *AmigaWorld* and found as far as this magazine was concerned, there were no word processors. I went through the same thing looking for information on databases. And then as for spreadsheets, those were ignored also. Are Amigas used exclusively for video effects? I'm very disappointed in *AmigaWorld*.

It is amazing that the productive possibilities of Amiga computers are completely ignored by your magazine. While I'm not interested in games, it would seem there is also considerable interest in that field, which is also ignored by *AmigaWorld*.

Arche M. Hartley
Colorado Springs, Colorado

Kudos for CD32

After reading "The Last Word" in the December issue, I felt I had to write in. I can't understand how any Amiga user wouldn't be glad to see the Amiga CD32. If Commodore was trying to break the so-called "game-machine" myth, then Commodore was trying to lose at least 80% of its market.

Here is what I think about the CD32. Well, it was the smartest thing Commodore could have done. Let's face it, a lot of people bought an Amiga just to play games. Commodore had a choice of a cartridge- or CD-based machine. Well, since cartridges have a high cost-to-capacity ratio, and that capacity is very limited, the CD system was the obvious choice.

For a while now, I've been looking for a beter machine for games. My A500 still takes care of my computer needs, so the A1200 just doesn't seem to be the right choice. I was looking for a console to buy, but I couldn't find one that was up to my standards (the Amiga really spoiled me.) Now that the CD32 is here, my choice couldn't be easier. The Amiga CD32 is simply the hottest console around, and it will definitely have a spot in my living room.

The CD32 is simply the hottest console around, and it will definitely have a spot in my living room.

Joseph Steiner
West New York, New Jersey

We All Make Mistakes

When flipping through the Dec. '93 issue, I was pleasantly surprised at the printing error on page 24. The page that accidentally appears there reveals a telling slice of the inflated PC market: a "high-end animation" software package with a list price of nearly $3000. If the corresponding *AmigaWorld* page got printed in some PC magazine, I can imagine its readers' reactions to an ad for Caligari or Brilliance or even an entire Video Toaster system. Perhaps to err is humane.

Todd Goodman
Manhattan, Kansas

*Put your thoughts to paper and send them to the Last Word, c/o **AmigaWorld**, 80 Elm St., Peterborough, NH, 03458.*■